SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name	EVERGOL ® ENERGY 176.6 FS
Product code (UVP)	84921041

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

Use	Seed treatment, Fungicide

1.3 Details of the supplier of the safety data sheet

Supplier	Bayer (Pty) Ltd. 1st Floor, Waterfall Circle 9 Country Estate Drive Waterfall City 2090 Midrand, Johannesburg South Africa
Telephone	+27 (011) 921 5911
Telefax	+27 (011) 921 5766
Responsible Department	QHSE - Nigel, South Africa +27 (011) 365 8675 (during business hours only)

1.4 Emergency telephone no.

Emergency telephone no.	+27 (0861) 555 777 (Western Cape Poisons Helpline)
Global Incident Response Hotline (24h)	+1 (760) 476 3964 (Company 3E for Bayer AG, Crop Science Division)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with the Regulations for Hazardous Chemical Agents, 2021

Short-term (acute) aquatic hazard: Category 1
H400 Very toxic to aquatic life.

Long-term (chronic) aquatic hazard: Category 1
H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling in accordance with the Regulations for Hazardous Chemical Agents, 2021

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

- Prothioconazole
- Metalaxyl
- Penflufen



Signal word: Warning

Hazard statements

H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P391	Collect spillage.
P308 + P311	IF exposed or concerned: Call a POISON CENTER/ doctor/ physician.
P410	Protect from sunlight.
P501	Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

No additional hazards known beside those mentioned.

Prothioconazole: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Penflufen: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Metalaxyl: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Flowable concentrate for seed treatment (FS)
Metalaxyl/Penflufen/Prothioconazole 61,4:38,4:76,8 g/l

Hazardous components

Chemical name	CAS-No.	Conc. [%]
Prothioconazole	178928-70-6	7,18
Penflufen	494793-67-8	3,59
Metalaxyl	57837-19-1	5,74
1,2-Benzisothiazol-3(2H)-one	2634-33-5	>= 0,005 – < 0,05
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3- one (3:1)	55965-84-9	>= 0.00015 – < 0.0015
Polyethylene-polypropylene copolymer	9003-11-6	>= 1,0
1,2-Propanediol	57-55-6	>= 1,0

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice	Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.
Inhalation	Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.
Skin contact	Wash off immediately with polyethylene glycol 400, then with plenty of water. If symptoms persist, call a physician.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	There is no specific antidote. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special hazards arising from the substance or mixture	Dangerous gases are evolved in the event of a fire.

5.3 Advice for firefighters

Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.
Further information	Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions	Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.
6.2 Environmental precautions	Do not allow to get into surface water, drains and ground water.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.
Additional advice	Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal.
6.4 Reference to other sections	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	Use only in area provided with appropriate exhaust ventilation.
Hygiene measures	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Wash hands immediately after work, if necessary take a shower. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Keep containers tightly closed in a cool, well-ventilated place. Store in original container and out of the reach of children, preferably in a locked storage area. Store in a place accessible by authorized persons only. Keep away from direct sunlight. Protect from freezing.
Advice on common storage	Keep away from food, drink and animal feedingstuffs.
Suitable materials	HDPE - steel case
7.3 Specific end use(s)	Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Prothioconazole	178928-70-6	1,4 mg/m3 (SK-ABS)		OES BCS*
Penflufen	494793-67-8	1,1 mg/m3 (TWA)		OES BCS*
Prothioconazole	178928-70-6	1,4 mg/m3 (SK-ABS)		OES BCS*
Penflufen	494793-67-8	1,1 mg/m3 (TWA)		OES BCS*

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

8.2 Exposure controls

Respiratory protection	Respiratory protection is not required under anticipated circumstances of exposure. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have

been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material	Nitrile rubber
Rate of permeability	> 480 min
Glove thickness	> 0,4 mm
Directive	Protective gloves complying with EN 374.

Eye protection

Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection

Wear standard coveralls and Category 3 Type 6 suit.
If there is a risk of significant exposure, consider a higher protective type suit.
Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.
If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	suspension
Colour	beige
Odour	musty
Odour Threshold	No data available
pH	6,0 - 8,0 (100 %) (23 °C)
Melting point/ range	No data available
Boiling Point	No data available
Flash point	No flash point - Determination conducted up to the boiling point.
Flammability	No data available
Auto-ignition temperature	445 °C
Thermal decomposition	No data available
Minimum ignition energy	No data available
Self-accelarating decomposition temperature	No data available

(SADT)	
Upper explosion limit	No data available
Lower explosion limit	No data available
Vapour pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available
Density	ca. 1,07 g/cm³ (20 °C)
Water solubility	dispersible
Partition coefficient: n-octanol/water	Prothioconazole: log Pow: 3,82 (20 °C) (pH 7) Penflufen: log Pow: 3,3 (25 °C)
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Oxidizing properties	No data available
Explosivity	Not explosive 92/69/EEC, A.14 / OECD 113
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
10.4 Conditions to avoid	Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Store only in the original container.
10.6 Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	LD50 (Rat) > 2.000 mg/kg

Acute inhalation toxicity	LC50 (Rat) > 2,205 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. Highest attainable concentration.
Acute dermal toxicity	LD50 (Rat) > 2.000 mg/kg
Skin corrosion/irritation	No skin irritation (Rabbit)
Serious eye damage/eye irritation	No eye irritation (Rabbit)
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Mouse)

Assessment STOT Specific target organ toxicity – single exposure

Prothioconazole: Based on available data, the classification criteria are not met.
Penflufen: Based on available data, the classification criteria are not met.
Metalaxyl: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Prothioconazole did not cause specific target organ toxicity in experimental animal studies.
Penflufen did not cause specific target organ toxicity in experimental animal studies.
Metalaxyl did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Prothioconazole was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.
Penflufen was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Metalaxyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Prothioconazole was not carcinogenic in lifetime feeding studies in rats and mice.
Penflufen caused at high dose levels an increased incidence of tumours in rats in the following organ(s): ovaries, Brain, hematopoietic system. The mechanism that triggers these tumours is not relevant to humans.
Metalaxyl was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Prothioconazole caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Prothioconazole is related to parental toxicity.
Penflufen did not cause reproductive toxicity in a two-generation study in rats.
Metalaxyl did not cause reproductive toxicity in a multi-generation study in rats.

Assessment developmental toxicity

Prothioconazole caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Prothioconazole are related to maternal toxicity.
Penflufen did not cause developmental toxicity in rats and rabbits.
Metalaxyl did not cause developmental toxicity in rats and rabbits.

Aspiration hazard

Based on available data, the classification criteria are not met.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 1,83 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient prothioconazole.
	LC50 (Cyprinus carpio (Carp)) 0,103 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient penflufen.
	LC50 (Oncorhynchus mykiss (rainbow trout)) > 100 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient metalaxyl.
Chronic toxicity to fish	Pimephales promelas (fathead minnow) NOEC: 0,0234 mg/l Exposure time: 35 d The value mentioned relates to the active ingredient penflufen.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 1,3 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient prothioconazole.
	EC50 (Daphnia magna (Water flea)) > 4,66 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient penflufen. No acute toxicity was observed at its limit of water solubility.
Chronic toxicity to aquatic invertebrates	NOEC (Daphnia magna (Water flea)): 1,5 mg/l Exposure time: 21 d The value mentioned relates to the active ingredient penflufen.
Toxicity to aquatic plants	ErC50 (Skeletonema costatum (marine diatom)) 0,03278 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient prothioconazole.
	EC10 (Skeletonema costatum (marine diatom)) 0,01427 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient prothioconazole.
	EC50 (Raphidocelis subcapitata (freshwater green alga)) > 5,1 mg/l Growth rate; Exposure time: 96 h The value mentioned relates to the active ingredient penflufen. No acute toxicity was observed at its limit of water solubility.
	EC50 (Lemna gibba (gibbous duckweed)) > 4,7 mg/l static test; Exposure time: 7 d The value mentioned relates to the active ingredient penflufen.

12.2 Persistence and degradability

Biodegradability	Prothioconazole: Not rapidly biodegradable Penflufen: Not rapidly biodegradable Metalaxyl: Not rapidly biodegradable
Koc	Prothioconazole: Koc: 1765 Penflufen: Koc: 280 Metalaxyl: Koc: 163

12.3 Bioaccumulative potential

Bioaccumulation	Prothioconazole: Bioconcentration factor (BCF) 19 Does not bioaccumulate. Penflufen: Bioconcentration factor (BCF) 142 Does not bioaccumulate. Metalaxyl: Bioconcentration factor (BCF) < 7 Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil	Prothioconazole: criterion of mobility not fulfilled Penflufen: mobile in soil Metalaxyl: Moderately mobile in soils

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment	Prothioconazole: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Penflufen: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB). Metalaxyl: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

Additional ecological information	No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.
Contaminated packaging	Not completely emptied packagings should be disposed of as hazardous waste.

SECTION 14: TRANSPORT INFORMATION

SANS 10231

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PROTHIOCONAZOLE, PENFLUFEN SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES

IMDG

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PROTHIOCONAZOLE, PENFLUFEN SOLUTION)
14.3 Transport hazard class(es)	9

14.4 Packing group	III
14.5 Marine pollutant	YES

IATA

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PROTHIOCONAZOLE, PENFLUFEN SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES

14.6 Special precautions for user
See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to IMO instruments
No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

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

Further information

WHO-classification: III (Slightly hazardous)

Other regulations

South Africa: Occupational Health Safety Act 1993.
Regulations for Hazardous Chemical Agents – 2021.
Fertilizer, Farm Feeds, Agricultural Remedies and Stock remedies Act.1947 (Act 36 of 1947).
Hazardous Substances Act. 1973 (Act No.15 of 1973).
Regulations for Hazardous Chemical Agents – 2021. SANS11014:2010.
Safety Data Sheet for Chemical Products – Content and Order of Sections. SANS10206: 2020. T
The Handling, Storage and Disposal of Pesticides. National Road Traffic Act, 1996 (Act No. 93 of 1996).
SANS 10228:2012
The identification and classification of dangerous goods for transport by road and rail modes.
National Environmental Management: Waste Act 59 of 2008

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
ECx	Effective concentration to x %
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)

ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
SANS	South African National Standard for Transport of dangerous goods by road
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

The information contained within this Safety Data Sheet is in accordance to Regulations for Hazardous Chemical Agents, 2021. This data sheet complements the user's instructions, but does not replace them. The information it contains is based on the knowledge available about the product concerned at the time it was compiled. Users are further reminded of the possible risks of using a product for purposes other than those for which it was intended. Addressees are requested to any additional national requirements.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.