

STARPLEX 83 CC

Material Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE / MISTURE AND OF THE COMPANY

1.1 Product Name:

D-FEND

1.2 Use: Public Health

1.3 Company Name:

Starplex 83 CC
Reg. No. 2004/01564/23
P.O. Box 14374
BREDELL 1623
SOUTH AFRICA
TEL: (011) 979-4246/7

1.4 Emergency Contact Numbers:

Tygerberg Poison Centre: +2721 931 6129
Griffon Poison Information Centre - 082 446 8946

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

According to UN GHS criteria

Aquatic Acute 1

Aquatic Chronic 1

For the classifications not written out in full in this section the full text can be found in section 16.

2.2 Label elements

Globally Harmonized System (GHS)

Pictogram:



2.3 Signal Word: Warning

2.4 Hazard Statements:

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

2.5 Precautionary Statement:

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.

2.6 Precautionary Statements (Response):

P391 Collect spillage.
Precautionary Statements (Disposal):
P501 Dispose of contents/container to hazardous or special waste collection point.

2.7 Labeling of special preparations (GHS):

May produce an allergic reaction. Contains: 1,2-BENZISOTHIAZOL-3(2H)-ONE
May cause paraesthesia. ALPHA-CYPERMETHRIN

2.8 Other hazards

According to UN GHS criteria
See section 12 - Results of PBT and vPvB assessment.
If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. COMPOSITION INFORMATION ON INGREDIENTS:

3.1 Substances: Not applicable

3.2 Mixtures

Chemical nature

Suspension Concentrate (SC)
Biocidal product

3.3 Hazardous ingredients (GHS)

According to UN GHS criteria

α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

Content (W/W): 5,8 %	Acute Tox. 4 (Inhalation - dust)
CAS Number: 67375-30-8	Acute Tox. 3 (oral)
EC-Number: 257-842-9	Skin Corr./Irrit. 3
INDEX-Number: 607-422-00-X	STOT SE 3 (irr. to respiratory syst.)
	STOT RE 2
	Aquatic Acute 1
	Aquatic Chronic 1
	M-factor acute: 10000
	M-factor chronic: 1000
	H316, H332, H301, H373, H335, H400, H410

1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one

Content (W/W): < 0,05 %

CAS Number: 2634-33-5

EC-Number: 220-120-9

INDEX-Number: 613-088-00-6

Acute Tox. 4 (oral)

Skin Corr./Irrit. 2

Eye Dam./Irrit. 1

Skin Sens. 1

Aquatic Acute 1

M-factor acute: 10

H318, H315, H302, H317, H400

Specific concentration limit:

Skin Sens. 1: >= 0,05 %

Propane-1,2-diol

Content (W/W): < 15 %

CAS Number: 57-55-6

EC-Number: 200-338-0

For the classifications not written out in full in this section the full text can be found in section 16

4. FIRST AID MEASURES:

4.1 Description of first aid measures

Remove contaminated clothing.

4.2 If inhaled:

Keep patient calm, remove to fresh air.

4.3 On skin contact:

Wash thoroughly with soap and water.

4.4 On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

4.5 On ingestion:

Rinse mouth and then drink plenty of water.

Most important symptoms and effects, both acute and delayed

4.6 Symptoms: Numbness and tingling of hands and feet, lung oedema, convulsions

Further important symptoms and effects are so far not known.

Indication of any immediate medical attention and special treatment needed

4.7 Treatment: Symptomatic treatment (decontamination, vital functions).

5. FIRE FIGHTING MEASURES:

5.1 Extinguishing media

Suitable extinguishing media:

Water spray, foam, dry powder, carbon dioxide

5.2 Special hazards arising from the substance or mixture:

Carbon monoxide, Carbon dioxide, Hydrogen cyanide, Hydrogen chloride, nitrogen oxides, organochloric compounds.

The substances/groups of substances mentioned can be released in case of fire.

5.3 Advice for fire-fighters

Special protective equipment:

Wear self-contained breathing apparatus and chemical-protective clothing.

5.4 Further information:

In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. ACCIDENTAL RELEASE MEASURES:

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Do not breathe vapour/spray. Avoid contact with the skin, eyes and clothing.

6.2 Environmental precautions

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up:

For small amounts:

Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

For large amounts:

Dike spillage. Pump off product.

Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

Reference to other sections:

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

7. HANDLING AND STORAGE:

7.1 Precautions for safe handling:

No special measures necessary if stored and handled correctly. Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

7.2 Protection against fire and explosion:

No special precautions necessary. The substance/product is non-combustible. Product is not explosive.

7.3 Conditions for safe storage, including any incompatibilities:

Segregate from foods and animal feeds.

7.4 Further information on storage conditions:

Keep away from heat. Protect from direct sunlight.

7.5 Storage stability:

Storage duration: 36 Months

Protect from temperatures below: -10 °C

Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

7.6 Specific end use(s):

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION:

8.1 Control parameters

Components with occupational exposure limits

57-55-6: Propane-1,2-diol

67375-30-8: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

8.2 Exposure controls

Personal protective equipment

Respiratory protection:

Suitable respiratory protection for higher concentrations or long-term effect: Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2).

Hand protection:

Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

8.3 General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Information on basic physical and chemical properties

Form:	Suspension
Colour:	White
Odour:	Faintly aromatic
Odour threshold:	Not determined due to potential health hazard by inhalation.
pH value:	approx. 6 - 8 (water, 1 %(m), 20 °C)
Crystallization temperature:	approx. -5,7 °C
Boiling point:	approx. 100 °C

Information applies to the solvent.

Flash point:	> 100 °C Non-flammable.
Evaporation rate:	Not applicable
Flammability:	Not applicable
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Upper explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Ignition temperature:	425 °C (Directive 92/69/EEC, A.15)
Vapour pressure:	approx. 23 hPa (20 °C)

Information applies to the solvent.

Density:	approx. 1,03 g/cm ³ (20 °C) (OECD Guideline 109)
Relative vapour density (air):	Not applicable
Solubility in water:	Dispersible
Partitioning coefficient n-octanol/water (log Kow):	Not applicable
Thermal decomposition:	345 °C, > 300 kJ/kg (DSC (OECD 113))

Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

Viscosity, dynamic:	28 mPa.s (20 °C) (OECD 114)
Explosion hazard:	Not explosive (Directive 92/69/EEC, A.14)
Fire promoting properties:	Not fire-propagating
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.

10. STABILITY AND REACTIVITY:

10.1 Reactivity:

No hazardous reactions if stored and handled as prescribed/indicated.

10.2 Chemical stability:

The product is stable if stored and handled as prescribed/indicated.

10.3 Possibility of hazardous reactions:

No hazardous reactions if stored and handled as prescribed/indicated.

10.4 Conditions to avoid:

See MSDS section 7 - Handling and storage.

10.5 Incompatible materials

Substances to avoid:

Strong bases, strong acids, strong oxidizing agents

10.6 Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

11. TOXICOLOGICAL INFORMATION:

11.1 Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact.
Virtually nontoxic by inhalation.

11.2 Experimental/calculated data:

LD50 rat (oral): > 5.000 mg/kg (Guideline 92/69/EEC, B.1)

LC50 rat (by inhalation): > 2,08 mg/l 4 h (OECD Guideline 403)

Highest concentration available for testing. No mortality was observed. An aerosol was tested.

LD50 rat (dermal): > 2.000 mg/kg (Directive 92/69/EEC, B.3)
No mortality was observed.

11.3 Irritation

Assessment of irritating effects:

Not irritating to the eyes. Not irritating to the skin. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

11.4 Experimental/calculated data:

Skin corrosion/irritation rabbit: Non-irritant (OECD Guideline 404)

Serious eye damage/irritation rabbit: Non-irritant (OECD Guideline 405)

11.5 Respiratory/Skin sensitization

Assessment of sensitization:

There is no evidence of a skin-sensitizing potential. The product has not been tested.

The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:

Modified Buehler test guinea pig: Non-sensitizing. (OECD Guideline 406)

11.6 Germ cell mutagenicity

Assessment of mutagenicity:

The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

11.7 Carcinogenicity

Assessment of carcinogenicity:

The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

11.8 Reproductive toxicity

Assessment of reproduction toxicity:

The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

11.9 Developmental toxicity

Assessment of teratogenicity:

The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

11.10 Specific target organ toxicity (single exposure)

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Remarks: The product has not been tested. The statement has been derived from the properties of the individual components.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

Assessment of repeated dose toxicity:

Repeated oral exposure may affect certain organs. Damages the peripheral nerve system.

Aspiration hazard

No aspiration hazard expected.

The product has not been tested. The statement has been derived from the properties of the individual components.

Other relevant toxicity information

Misuse can be harmful to health.

12. ECOLOGICAL INFORMATION:

12.1 Toxicity

Assessment of aquatic toxicity:

Very toxic to aquatic life with long lasting effects.

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

12.2 Toxicity to fish:

LC50 (96 h) 0,00093 mg/l, *Pimephales promelas* (OPP 72-1 (EPA-Guideline), Flow through.)

Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

12.3 Aquatic invertebrates:

EC50 (48 h) 0,0003 mg/l, Daphnia magna (OECD Guideline 202, part 1)
Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxy late; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

12.4 Aquatic plants:

EC50 (7 d) > 0,00139 mg/l (growth rate), Lemna gibba (OECD Guideline 201)
No observed effect concentration (7 d) > 0,00139 mg/l (growth rate), Lemna gibba (OECD guideline 221, static)
EC50 (72 h) > 0,027 mg/l (growth rate), Anabaena flos-aquae (OECD Guideline 201)

Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxy late; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

12.5 Chronic toxicity to fish:

No observed effect concentration (34 d) 0,03 μ g/L, Pimephales promelas (OPP 72-4 (EPAGuideline), Flow through.)

Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxy late; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

12.6 Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) 0,00003 mg/l 0,03 μ g/L, Daphnia magna (OPP 72-4 (EPAGuideline), semistatic)

12.7 Persistence and degradability

Assessment biodegradation and elimination (H₂O):

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxy late; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

Assessment biodegradation and elimination (H₂O):

Not readily biodegradable (by OECD criteria).

Bioaccumulative potential

Assessment bioaccumulation potential:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxy late; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

Assessment bioaccumulation potential:

Accumulation in organisms is not to be expected.

Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxy late; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

Bioaccumulation potential:

Bioconcentration factor: 155 - 910 (73 d), *Cyprinus carpio* (OECD Guideline 305 °C)

12.8 Mobility in soil

Assessment transport between environmental compartments:

Adsorption in soil: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: α -cypermethrin (ISO); racemate comprising (R)- α -cyano-3-phenoxybenzyl (1S, 3S)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxy late; (S)- α -cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

12.9 Assessment transport between environmental compartments:

Adsorption in soil: Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Results of PBT and vPvB assessment

The product does not contain a substance fulfilling the PBT persistent /bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

12.10 Other adverse effects

The product does not contain substances that are listed in the Montreal Protocol on substances that deplete the ozone layer.

Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control.

13. DISPOSAL CONSIDERATIONS:

13.1 Waste treatment methods:

Must be disposed of or incinerated in accordance with local regulations.

13.2 Contaminated packaging:

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

14. TRANSPORT INFORMATION:

Land transport

ADR

UN number : UN3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (contains ALPHA-CYPERMETHRIN)
Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: Yes
Special precautions for user: None

RID

UN number: UN3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (contains ALPHA-CYPERMETHRIN)
Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: Yes
Special precautions for user: None known

Inland waterway transport

ADN

UN number: UN3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (contains ALPHA-CYPERMETHRIN)
Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: Yes
Special precautions for user: None known

Transport in inland waterway vessel: Not evaluated

Sea transport

IMDG

UN number: UN 3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (contains ALPHA-CYPERMETHRIN)
Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: Yes
Marine pollutant: Yes
Special precautions for user: None known

Air transport

IATA/ICAO

UN number: UN 3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains ALPHA-CYPERMETHRIN)
Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: Yes
Special precautions for user: None known

UN number: See corresponding entries for "UN number" for the respective regulations in the tables above.

UN proper shipping name: See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

Transport hazard class(es): See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

Packing group: See corresponding entries for "Packing group" for the respective regulations in the tables above.

Environmental hazards: See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

Special precautions for user: See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

Transport in bulk according to Annex II of MARPOL and the IBC Code

Regulation: Not evaluated

Shipment approved: Not evaluated

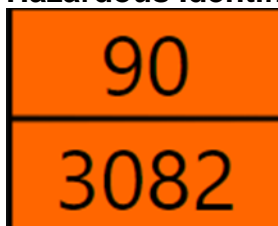
Pollution name: Not evaluated

Pollution category: Not evaluated

Label:



Hazardous Identification Number:



15. REGULATORY INFORMATION:

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2. Chemical Safety Assessment

Advice on product handling can be found in sections 7 and 8 of this safety data sheet.

16. OTHER INFORMATION:

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.