



## D-Fend

READ THE LABEL BEFORE USE  
KEEP OUT OF REACH OF CHILDREN AND ANIMALS

GROUP

3A

INSECTICIDE

REG. NO. L 9088 Act No. 36 of 1947  
Namibian Reg. No. N-AR 1516

REG. NR. L 9088 Wet Nr. 36 van 1947  
Namibiese Reg. Nr. N-AR 1516

A long lasting suspension concentrate contact and stomach insecticide for the control of malaria vectors, nuisance and biting flies, cockroaches (american and german), bedbugs, fleas, mosquitoes, hide beetle larva- and beetle, fishmoths, stableflies, ants and *Alphitobius* larva and -beetle.

'n Suspensiekonsentraat kontak- en maaginsekododer met 'n lang nawerkende aksie vir die beheer van malariavektore, hinderlike- en steekvlieë, kakkerlakke (amerikaanse en duitse), weeluisse, vlooië, vismotte, muskiete, velkewerlarwe- en kewer, perdevlieë, miere en *Alphitobius*-kewer en -larwe.



**Hazard Statements:**

- Very toxic to aquatic life with long lasting effects.

**Precautionary Statements:**

- If medical advice is needed, have product container at hand.
- Collect spillage.
- Dispose of contents/container in accordance with local regulations.

**WARNING**

**ACTIVE INGREDIENT: / AKTIEWE BESTANDDEEL:**

Alpha-cypermethrin (Pyrethroid)

60 g/kg

Alfa-sipermetrien (Piretroëd)

NET CONTENTS: / NETTO INHOUD: Contact supplier for available packaging sizes/ Kontak verskaffer vir beskikbare verpakking groottes.

**REGISTRATION HOLDER**

Starplex 83 CC  
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**Distribution by:**

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**IN CASE OF POISONING CALL THE FOLLOWING NUMBER: (+27) 82 446 8946**

UN NO. 3082

## WARNINGS

- Concentrate is poisonous when swallowed and moderately toxic by skin contact.
- Not significantly hazardous to bees, various other beneficial pest parasites and predators and fish under field conditions, provided the product is used as directed.
- Do not spray over or allow drift to contaminate drinking water and water bodies such as dams, ponds, rivers, streams or fish hatcheries.
- Moderately toxic to wildlife.
- Store in a cool place away from food and feedstuffs.
- Keep concentrate out of reach of children, uninformed persons and animals.
- Do not apply directly onto animals.
- Do not apply to surfaces where food is handled.

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Although this remedy has been extensively tested under a large variety of conditions the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of a pest against the remedy concerned as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to the environment or harm to man or animal or lack of performance of the remedy concerned due to failure of the user to follow the label instructions or due to the occurrence of conditions which could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

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## PRECAUTIONS

- Avoid eye splashes, skin contact and inhalation of spray mist.
- Wear protective clothing: Overall, gloves and facemask.
- Wash with soap and water after use or after accidental skin contact.
- Do not eat, drink or smoke while mixing or spraying or before washing hands and face.
- Prevent contamination of food, feedstuffs, eating utensils and drinking water.
- Remove pets and aquaria or cover aquaria.
- Thoroughly wash and rinse the spray equipment / containers / basins after use and dispose of wash water where it will not contaminate crops, grazing, rivers and dams.
- TRIPLE RINSE empty container in the following manner: Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add these rinsings to the contents of the spray tank.
- Destroy empty container and do not re-use for any other purpose.

### **RELEVANT SUBSTANCES:**

All relevant hazardous substances within the formulation:

6% Alpha-cypermethrin

< 0.05% 1,2-benzisothiazolin-3-one

### **FIRST AID:**

**If inhaled:** Keep patient calm, remove to fresh air.

**On skin contact:** Wash thoroughly with soap and water.

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

**On ingestion:** Rinse mouth and then drink plenty of water.

## **DIRECTIONS FOR USE: USE ONLY AS DIRECTED**

**Compatibility:** Do not mix **D-FEND** with any other chemical.

### **Mixing instructions for spraying:**

Half fill the sprayer with clean water. Measure the required volume of **D-FEND** and pre-mix this with some water. Add this mixture to the water in the sprayer. Fill the sprayer with water to the required level and shake the sprayer well to ensure proper mixing or ensure continual mechanical or hydraulic agitation before spraying commences. Prepared spray mixture must not be left in the spray tank for any length of time e.g. overnight.

### **General directions:**

**D-FEND** is a long lasting suspension concentrate contact and stomach insecticide for the control of malaria vectors, flies, cockroaches, bedbugs, fleas, fish moths, mosquitoes, ants, skin and hide beetle- and larvae as well as litter beetle- and larvae. The length of control depends on:

- insect species being treated,
- level of infestation,
- type of surface (or bed-net fabric),
- whether the treatment is applied indoors or outdoors,
- exposure to sunlight and weather conditions and,
- depending on dosage rate, months of control can be expected indoors and on bed-nets, and several weeks outdoors under favourable conditions.

**D-FEND** spray mixture is colourless and odourless and can be used indoors or outdoors, in and around homes, factories, hotels, shops, food handling and processing establishments, hospitals, schools, dairy parlours, piggeries, stables, poultry houses, dog kennels, refuse dumps and similar places where high levels of hygiene are required.

### **Poultry uses:**

- **Poultry sheds:** All cracks, crevices and potential hiding places where the litter beetle may seek shelter must receive special attention. Ensure thorough wetting of all surfaces including vertical surfaces up to at least one metre above the ground. **D-FEND** will control but will NOT eliminate existing populations of litter beetles that have invaded and colonised the insulation of cavity walls or other protected places.
- **Broiler sheds:** Should be treated before restocking with each new batch of chicks, i.e. after the clearing, cleaning and disinfecting operations have been carried out.
- **Laying sheds:** Should be treated on a regular basis. Frequency will depend on the type of surface to be treated. Dropping and litter heaps may require treatment more often. New and empty cages can be treated BEFORE stocking with hens. DO NOT SPRAY THE BIRDS DIRECTLY OR ALLOW THE SPRAYMIST TO DRIFT OVER THEM.

### **Malaria vector control:**

#### **Surface sprays**

- Use a sprayer fitted with a nozzle that will deliver coarse droplets at a low pressure. Do not spray at high pressure that will result in a spray mist.
- Ensure total coverage of all surfaces. All cracks, crevices and potential hiding places where mosquitoes may seek shelter must receive special attention.
- Allow spray to dry on treated surfaces before re-entering.

#### **Bed-nets**

- All nets need to be washed and dried before treatment. Some new nets are sometimes starched, and must therefore be washed first to remove the starch. Ensure that all traces of soap are rinsed out after washing and before treating with **D-FEND**, as alkaline soap residues could influence the persistence of the treatment.
- The volume of **D-FEND** to be used per bed-net is dependent on the length of time that control is required, as well as the size of the net.

Months of control required (dose active ingredient)	Single bed-net (±12 m <sup>2</sup> )	Double bed-net (±16 m <sup>2</sup> )	Queen size bed-net (±20 m <sup>2</sup> )	King size bed-net (±24 m <sup>2</sup> )
4 – 6 months (20 mg a.i. / m <sup>2</sup> )	4 mℓ	5.5 mℓ	6.5 mℓ	8 mℓ
more than 9 months (40 mg a.i. / m <sup>2</sup> )	8 mℓ	10.5 mℓ	13.5 mℓ	16 mℓ

- Bed-net fabric, mesh size and accessories such as a roof, border or string ties, affect the volume of water needed to treat and thoroughly wet a net. Generally 30 mℓ mixture / m<sup>2</sup> is needed for synthetic materials (e.g. polyester) and 130 – 150 mℓ / m<sup>2</sup> for cotton.
- Rough guidelines for the amount of water needed to wet different size bed-nets are given below (it is recommended however that the exact absorption volume for each type and size of net be determined before treatment).

Fabric	Single bed-net (±12 m <sup>2</sup> )	Double bed-net (±16 m <sup>2</sup> )	Queen size bed-net (±20 m <sup>2</sup> )	King size bed-net (±24 m <sup>2</sup> )
SYNTHETIC MATERIAL (e.g. Polyester)	360 mℓ	480 mℓ	600 mℓ	720 mℓ
Cotton	1700 mℓ	2250 mℓ	2800 mℓ	3400 mℓ

#### Mixing Instructions for treating bed-nets.

- Use a suitable container / bucket / bowl / bag, that is large enough to hold the bed-net as well as the required amount of water.
- Treat nets outside or in a well-ventilated area and use gloves.
- Fill the container with the predetermined volume of water to fully wet the bed-net to be treated. Add the correct volume of **D-FEND** (see above) to the water and mix well.
- Soak the net in the mixture until it is thoroughly wet.
- Remove the net and allow excess to drip back into the container. (If the correct amount of mixture was used, there should be very little left).
- Allow the net to dry evenly by laying it on a bed or bedding (which helps to kill bedbugs) or on a plastic sheet outside in the shade.
- When net is dry, it may be hung up over the bed.
- After treating nets, wash hands, arms, and container and dispose of wash water where it will not contaminate crops, grazing, rivers and dams.
- The effect of the treatment will not be the same if the net is washed after treatment, and a re-treatment is advisable.
- Bed-nets treated with **D-FEND** will not be stained or have an odour after treatment and will not be more flammable.
- To treat several identical nets, a larger volume of mixture can be prepared by multiplying the volume of **D-FEND** as well as the volume water needed per net, by the total number of nets to be treated.

ALL SPRAY APPLICATIONS MUST BE MADE WITH SUITABLE EQUIPMENT THAT IS IN GOOD WORKING ORDER AND CORRECTLY CALIBRATED TO ENSURE THE DESIRED COVERAGE FOR THAT PARTICULAR METHOD OF APPLICATION.

PEST	DOSAGE	DIRECTIONS FOR APPLICATION
<b>SKINS &amp; HIDES</b>		
Skin & Hide beetle larvae	35 mℓ / 10 ℓ water	<b>skins and Hides:</b> Thoroughly wet all parts. Repeat treatment every 3 months or when necessary.
Skin & Hide beetle adults	35 mℓ / 10 ℓ water	<b>Warehouse floors, walls and other surfaces:</b> Apply spray mixture to the point of run-off. Repeat treatment every 3 months or if necessary.

<p>MOSQUITO ADULTS (INCLUDING MALARIA VECTORS)</p>	<p>40 – 85 ml / 10 ℓ water (12 – 25.5 mg a.i. / m<sup>2</sup>)</p> <p>160 ml / 10 ℓ water (50 mg a.i. / m<sup>2</sup>)</p> <p>20 mg a.i. / m<sup>2</sup></p> <p><b>OR</b></p> <p>40 mg / a.i. / m<sup>2</sup></p>	<p>Several months of control can be expected indoors at the highest dosage rates (160 ml / 10 ℓ water), but at the lower dosage rate only 4 – 6 weeks' control can be expected. The length of control is determined by the dosage rate and the type of treated surface. (See also <b>General Directions</b>, under <b>DIRECTIONS FOR USE</b> above)</p> <p>Apply as a coarse spray to surfaces where insects settle in areas where re-sprays can be done every 4 – 6 weeks. Apply to point of run-off. Use higher dose rate for longer lasting control or where infestation is severe. Repeat if necessary.</p> <p><b>MALARIA VECTOR - SURFACE TREATMENTS</b></p> <p>Recommended for use as a surface spray on <u>coarse surfaces</u> (such as clay and brick internal and external walls, roofs and ceilings, e.g. thatched). Use this rate where applications can be made <b>only once or twice</b> during the malaria infection period of October to May. Apply as a coarse spray to the point of run-off by using <u>50 ml spray mixture</u> / m<sup>2</sup>.</p> <p>If the applications will be made on <u>smooth surfaces</u> (such as glass and wood inside and outside the house) apply as a coarse spray to the point of run-off by using <u>25 ml spray mixture</u> / m<sup>2</sup> by mixing 330 ml of <b>D-FEND</b> with 10 ℓ water. This will also result in applying 50 mg a.i. / m<sup>2</sup>.</p> <p><b>BED-NET TREATMENT</b></p> <p>Mix the required volume <b>D-FEND</b> with enough water to wet a bed-net. Soak the net in the mixture until it is thoroughly wet. Use the higher rate for longer period of control.</p> <p>For amount of <b>D-FEND</b> refer to <b>Bed-nets</b> under <b>MALARIA CONTROL</b> above. See further information under <b>General directions</b> under <b>DIRECTIONS FOR USE</b> above as well.</p>
<p><b>POULTRY SHEDS</b> Lesser Mealworm / Litter beetle (<i>Alphitobius diaperinus</i>)</p>	<p>40 - 85 ml / 10 ℓ water</p>	<p>Apply as a coarse spray to the interior surfaces of the sheds. Ensure thorough wetting of the floors, walls and other surfaces. Repeat if necessary. Use higher dose rate for longer lasting control or where infestation is severe. (See under <b>General Directions</b> above). <b>DO NOT SPRAY THE BIRDS DIRECTLY OR ALLOW THE SPRAYMIST TO DRIFT OVER THEM.</b></p>
<p><b>PUBLIC HEALTH:</b> Adult house flies Adult stable flies Ants Bedbugs Cockroaches (American &amp; German) Fish moths Fleas</p>	<p>40 - 85 ml / 10 ℓ water</p>	<p>Apply as a coarse spray or with a paintbrush to cracks, crevices and any place where these insects may hide and on surfaces over which they may crawl or settle. Apply to point of run-off. Use higher dose rate for longer lasting control or where infestation is severe. Repeat if necessary.</p>