

Ster 250 SC

South Africa Reg. No: L 11499 Act/Wet No. 36 of/van 1947



A suspension concentrate, systemic, translaminar contact fungicide for the control of diseases in crops as indicated.

ACTIVE INGREDIENT

Azoxystrobin (strobilurin) 250 g/l

FRAC FUNGICIDE GROUP CODE: 11



WARNING

HAZARD STATEMENTS:

- Harmful if inhaled.
- Very toxic to aquatic life with long lasting effects.
- Avoid breathing vapours, mists or spray.
- Avoid release into the environment.

PRECAUTIONARY STATEMENTS:

- Wash contacted areas thoroughly after handling.
- Wear protective gloves, protective clothing and eye or face protection.

Registration holder: **Green Island Investments (Pty) Ltd.**

Co. Reg. No.: 2013/043963/07

P.O. Box 1822, Heidelberg 1438, South Africa

Tel: 078 737 9236

24 HR EMERGENCY NUMBERS

Griffon Poison Information Centre: +27 82 446 8946

24 Hr Transport / Spill emergency no:

(Hazcall24) +27 86 044 4411 (Typhoon Plant Protection)

Distributed by: **Typhoon Plant Protection (Pty) Ltd.**

Co. Reg. No.: 1998/006156/07, C/O Farm Vlakfontein

Corner of the R23 Benoni Road & R550 Nigel Road

Brakpan District, Heidelberg 1438, Gauteng, South Africa

Tel: 078 737 9236

Net Volume:

ℓ

Expiry Date:

Batch No:

Date of Manufacture:

U.N. No. 3082

 **Typhoon**
PLANT PROTECTION



READ LABEL IN DETAIL BEFORE OPENING THE CONTAINER. FOR FULL PARTICULARS, SEE ENCLOSED LEAFLET.
KEEP OUT OF REACH OF CHILDREN AND ANIMALS.

WARNINGS:**Withholding periods:**

Minimum time between the last application and harvest or feeding:	
Potatoes, Tomatoes, Maize & Sweetcorn	7 days
Citrus (excluding Lemons)	77 days
Citrus (Lemons)	21 days
Dry beans	45 days
Canola	30 days

NOTE: ABOVE-MENTIONED WITHHOLDING PERIODS REFER TO COMPLIANCE WITH LOCAL MAXIMUM RESIDUE LIMITS (MRL'S). HOWEVER, IT IS IMPORTANT TO NOTE THAT IMPORT TOLERANCES OF OTHER COUNTRIES MIGHT POSSIBLY BE EXCEEDED. IF THE TREATED CROP WILL BE EXPORTED, FIRST CONSULT THE RELEVANT IMPORTER OR EXPORTING BODY REGARDING THE USE OF THIS PRODUCT, MRL'S AND RECOMMENDED WITHHOLDING PERIODS.

WARNINGS:**HAZARD STATEMENTS:**

- Harmful if inhaled.
 - Very toxic to aquatic life with long lasting effects.
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- Handle with care.
 - Store away from food, feeds, seed, fertilizers and other agricultural chemicals.
 - Store in a cool, dry, well-ventilated place in the original container, tightly closed and secured.
 - Keep out of reach of children, uninformed persons and animals.
 - **RE-ENTRY: Do not** enter treated area until spray deposit has dried unless wearing protective clothing.

Aerial application:

Notify all inhabitants in the immediate vicinity of the lands to be sprayed and issue the necessary warnings.

Do not spray over or allow drift to contaminate water or adjacent areas.

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 soil, climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the disease 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 crops, vegetation, the environment, or harm to man or animal or for lack of performance of the remedy concerned due to failure of the user to follow the label instructions or 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.

PRECAUTIONS:

PRECAUTIONARY STATEMENTS:

- Wash contacted areas thoroughly after handling.
- Wear protective gloves, protective clothing and eye or face protection.
- Avoid contact of product with skin and eyes.
- Wear a face shield and rubber gloves when handling the concentrate and during mixing.
- Wash with soap and water after use or accidental skin contact.
- In case of eye contact, immediately flush the eyes with clean, cold water for 15 minutes, holding the eyelid(s) open. If irritation persists, seek medical advice.
- Wash contaminated clothes daily after use.
- **Do not** eat, drink or smoke whilst applying or mixing, or before washing hands and face or change of clothing.
- Prevent spray drift onto other crops, grazing, rivers, dams or areas not under treatment.
- Clean the spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams.
- **TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS:** Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler www.croplife.co.za. **Do not** bury, burn, or donate the container to any other parties that may use it as a container for food or beverages.
- Destroy the empty container by perforation and flattening and dispose of it in a safe way.
- **Never** re-use the empty container for any other purpose.
- Prevent contamination of food, feeds, drinking water and eating utensils.

Related ingredients:

Substance name (IUPAC)	CAS - No.	Concentration % By weight
Azoxystrobin (Active ingredient)	131860-33-8	22.73%
Sodium salt of polynaphthalene sulphonic acid (Dispersant agent)	36290-04-7	3.50%
Sodium dodecanol sulfate (Wetting agent)	151-21-3	2.50%
Ethylene glycol (Anti-freeze)	107-21-1	5.00%
Water (Solvent)		65.00%

FIRST AID TREATMENT:

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure and if symptoms persist consult a doctor.

Inhalation: If vapours or mists have been inhaled, move victim to fresh air and remove source of contamination if safe to do so. Administer artificial respiration if patient is not breathing **OR** if breathing is laboured supply oxygen. Only qualified personnel should administer oxygen. **Seek medical attention.**

Skin: Remove contaminated clothing and shoes. Wash skin gently and thoroughly with cold water and non-abrasive soap. Obtain medical attention if irritation occurs.

Eyes: Flush eyes with clean water. Lift eyelids to facilitate irrigation. If present, remove contact lenses and continue rinsing. **Seek medical attention if irritation develops.**

Ingestion: Rinse mouth thoroughly with water if person is alert. Have person drink plenty of water if able to swallow. **Never** give anything by mouth to an unconscious person. **Do not** induce vomiting, unless instructed to do so by a physician. If vomiting occurs keep head lower than hips to prevent aspiration. Obtain medical attention of the affected person is not feeling well.

RESISTANCE WARNING

For resistance management, **STER 250 SC** is a **Group Code 11 fungicide**. Any fungal population may contain individuals naturally resistant to **STER 250 SC** and other **Group Code 11 fungicides**. The resistant individuals can eventually dominate the fungal population if these fungicides are used repeatedly and exclusively in programs. These resistant fungi may not be controlled by **STER 250 SC** or any other **Group Code 11 fungicides**.

To delay fungicide resistance:

- **Avoid** exclusive repeated use of fungicide from the same fungicide group code. Alternate or tank mix with products from different fungicide group codes,
- Integrate other control methods (chemical, cultural, biological) into disease control programmes.

Additional information with regard to Resistance Management Strategy:

- In order to prevent development of resistance to **STER 250 SC** by pathogen populations, it is important that **STER 250 SC** be alternated with registered fungicides from different chemical classes (i.e. not strobilurins, e.g. **Azoxystrobin**). This management strategy to prevent resistance should, however, not include fungicide products to which resistance has already developed in the past, or fungicides using the same mode of action.
- Always apply **STER 250 SC** preventively, as instructed in the recommendations table.
- Adhere to the dosage rates recommended on the label, **do not** reduce any dosage rate.
- **Do not** apply any other strobilurin, or related chemicals, in the same control programme with **STER 250 SC**.

Mode of Action:

STER 250 SC contains the active **Azoxystrobin** which is a quinone-outside inhibitor. This blocks the electron transfer between cytochrome b and c1 which results in inhibition of mitochondrial respiration.

DIRECTIONS FOR USE: USE ONLY AS DIRECTED

Compatibility:

STER 250 SC is compatible with **Mancozeb**, copper oxychloride, mineral oils and buffers. **Do not** add any other agricultural chemical to the tank mixture. It is advisable to always carry out a physical compatibility test prior to application when **STER 250 SC** is tank mixed with other fungicides or insecticides.

Mixing instructions:

Shake the container well before use. Replace cap directly after use.

- Fill the spray tank to half of the desired volume with clean water and ensure continuous agitation.
- Add the required quantity of **STER 250 SC** to the mixing tank, while agitation is continued.
- Observe the following formulation mixing sequence if other products will be tank mixed with **STER 250 SC**: buffer/acidifier; wettable powder or granules, suspension concentrate, emulsifiable concentrate, wetters. Pre-mix each product separately with a small volume of water before adding it to the spray tank. Thereafter, fill the tank to the required volume with clean water while maintaining agitation, to ensure thorough mixing of the spray mixture, before application commences.
- Ensure continuous agitation during mixing and application.
- The spray mixture must be sprayed immediately after mixing. Prepared spray mixture must not be left in the spray tank for any length of time, e.g., overnight.

APPLICATION:

- **Calibration:** It is important to ensure that all application equipment is in good working order and correctly calibrated to apply the required spray volumes and dosage rate. Ensure good coverage by using the spray volumes as indicated.

GROUND APPLICATION:

STER 250 SC can be applied by any suitable medium or high volume applicator provided it is correctly calibrated, is fitted with an effective agitation mechanism and is able to distribute the spray material evenly over target area.

AERIAL APPLICATION

Aerial application of **STER 250 SC** may only be done by a registered Aerial Application Operator using a correctly calibrated, registered aircraft according to the instructions of SANS Code 0118 (Aerial Application of Agricultural Pesticides). Ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. It is therefore essential that the following criteria be met:

- **Volume:** A spray mixture volume of 30 l/ha is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy, or be held responsible for any adverse effects if this product is applied aerially at a lower volume rate than recommended above.
- **Droplet coverage:** 25 - 35 droplets / cm² must be recovered at the target area.
- **Droplet size:** A droplet spectrum with a VMD of 280 - 300 micron is recommended. Limit the production of fine droplets less than 150 micron (high drift and evaporation potential) to a minimum.

- **Flying height:** Maintain the height of the spray boom at 3 - 4 m above the target. **Do not** spray when aircraft is diving, climbing or when banking so suitable **atomising equipment** that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product. The spraying system must produce a droplet spectrum with the lowest possible Relative Span.
- Position all the atomisers within the inner 60 - 75 % of the wingspan to prevent droplets from entering the **wingtip vortices**.

The difference in **temperature** between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 8 °C.

Stop spraying if the **wind speed** exceeds 15 km/h.

Stop spraying under **turbulent**, unstable and dry conditions during the heat of the day. Spraying under temperature **inversion conditions** (spraying in or above the inversion layer) and/or high humidity conditions (relative humidity 80 % and above) may lead to the following:

- reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage).
- damage to other sensitive crops and/or non-target areas through drifting of the suspended spray cloud away from the target field.
- Ensure that the Aerial Spray Operator knows exactly which fields to spray.

Obtain an assurance from the Aerial Spray Operator that the above requirements will be met and that relevant data will be compiled in a logbook and kept for future reference.

EFFECT OF RAIN ON APPLICATION:

Repeat application should rain fall within two hours after application.

CROP RECOMMENDATIONS

MAIZE

- Start application before 3 % of the total leaf surface area shows disease symptoms OR when symptoms are present on the basal 3 - 5 leaves.
- **Never** use **STER 250 SC** as a corrective or curative application or after an unsuccessful application of any product.
- With short season hybrids when the first spray was applied after pollination, it will probably be sufficient to control the disease (a second spray might not be necessary).
- **STER 250 SC** can be used in a spray programme with **Difenoconazole 250 EC**.
- **Do not** apply more than two applications of **STER 250 SC** to maize in the same season.
- When multiple applications are necessary to control the disease, the last application for the season should be done with fungicides from a different chemical group other than strobilurin i.e. triazoles namely **Difenoconazole 250 EC**.

CROP/DISEASE	DOSAGE RATE /h	TIMING OF APPLICATION
MAIZE & SWEETCORN Grey leaf spot <i>(Cercospora zeaе- maydis)</i>	Ground and aerial application 400 mℓ STER 250 SC /ha or 300 mℓ STER 250 SC /ha followed by 300 mℓ Difenoconazole 250 EC /ha	With medium to long-season hybrids or if the first application was applied within three weeks before pollination, a follow-up application with Difenoconazole 250 EC must be applied 4 - 5 weeks later.
	300 mℓ STER 250 SC /ha followed by 300 mℓ STER 250 SC /ha followed by 300 mℓ Difenoconazole 250 EC /ha	In certain cases where the initial application was applied at a very early stage, a third application might be necessary. In this case the first two applications are made with STER 250 SC at intervals of 4 - 5 weeks. The last application must be done with Difenoconazole 250 EC 4 - 5 weeks after the second application.
		The above rates of STER 250 SC will also control rust if present. Refer to the Resistant Management Strategy above.
Rust <i>(Puccinia sorgi)</i>		The above mentioned rates of STER 250 SC will also control Northern corn leaf blight (<i>Exserohilum turcicum</i>) if present. Refer to Resistant Management Strategy above.
Northern corn leaf blight (<i>Exserohilum turcicum</i>)		
Spray volumes: Tractor application: 300 - 450 ℓ water/ha High clearance tractor application: 150 - 300 ℓ water/ha Aerial application: 40 ℓ water/ha Knapsack sprayer application: 60 - 70 ℓ water/ha		

SUGGESTED SPRAY PROGRAMME:

Number of applications/season	Number of STER 250 SC applications/season	STER 250 SC rate: product / ha	Number of triazole applications/season	Difenoconazole 250 EC rate: product / ha
1	1	400 mℓ	0	N/A
2	1	300 mℓ	1	Registered rate
3	2	300 mℓ each	1	Registered rate

POTATOES

- Apply in a preventive spray programme and alternate with **Chlorothanoniil 720 SC** every 7 days. Start application before the disease appears or when weather conditions favour the development of the disease. Ensure good coverage.
- **Do not** apply **STER 250 SC** when the disease is already present. In this case, an appropriate systemic product should be applied. Apply at least two applications with a systemic product
- (e.g. **Difenoconazole 250 EC** or **Chlorothanoniil 720 SC**, then return to the preventive spray programme as suggested).
- The total number of **STER 250 SC** applications per season, must not exceed 30 % (normally three) of the total number of applications in the **STER 250 SC / Chlorothanoniil 720 SC** spray programme.

Suggested spray programme for the control of early and late blight:

- The first 2 - 3 applications must be made with **Chlorothanoniil 720 SC** followed by a **STER 250 SC** application 7 days later in the early flowering stage. Maintain this 7-day alternating product spray programme with **Chlorothanoniil 720 SC** until a maximum of 3 **STER 250 SC** applications (or equal to a third of the total fungicide applications) have been made (Refer to Resistance Management Strategy above). Thereafter, continue with the **Chlorothanoniil 720 SC** applications throughout the rest of the growing season.
- **Do not** apply **STER 250 SC** as the first or last application in the spray programme.
- Apply **Chlorothanoniil 720 SC** at the rates indicated on the label.
- The first 2 - 3 **STER 250 SC** applications can be replaced by a **Chlorothanoniil 720 SC** application according to the label as applicable.

The suggested spray programme on potatoes will also control **late blight** (*Phytophthora infestans*).

CROP/DISEASE	DOSAGE RATE /ha	TIMING OF APPLICATION
POTATOES Early blight (<i>Alternaria solani</i>)	300 ml STER 250 SC /ha alternated with Chlorothanoniil 720 SC 330 ml STER 250 SC /ha alternated with Chlorothanoniil 720 SC	Ground application: 300 ml STER 250 SC /ha alternated with Chlorothanoniil 720 SC at 1 - 2 l /ha in at least 500 l water / ha. Aerial application: 330 ml STER 250 SC /ha alternated with Chlorothanoniil 720 SC at 1 - 2 l /ha in 30 - 40 l water/ha.

TOMATOES

- Apply in a preventive spray programme and alternate with **Chlorothanoniil 720 SC** every 7 days. Start application before the disease appears or when weather conditions favour the development of the disease. Ensure good coverage.
- **Do not** apply **STER 250 SC** when the disease is already present. In this case, an appropriate systemic product should be applied. Apply at least two applications with a systemic product then return to the preventive spray programme as suggested.
- The total number of **STER 250 SC** applications per season, must not exceed 30 % (up to six) of the total number of applications in the **STER 250 SC / Chlorothanoniil 720 SC** spray programme.
- **STER 250 SC** and **Chlorothanoniil 720 SC** should be applied in water volumes of a minimum of 300 ℓ to a maximum of 1 000 ℓ /ha on tomatoes from 10 to 130 cm high respectively.

Suggested spray programme:

- The first 2 - 3 applications must be made with **Chlorothanoniil 720 SC** followed by an **STER 250 SC** application 7 days later in the early flowering stage (The **STER 250 SC** may be applied earlier if weather conditions favours infection). Maintain this 7-day alternating product spray programme with **Chlorothanoniil 720 SC** until a maximum of 6 **STER 250 SC** applications (or equal to a third of the total fungicide applications) have been made (Refer to Resistance Management Strategy above). Thereafter, continue with the **Chlorothanoniil 720 SC** applications throughout the rest of the growing season.
- **Do not** apply **STER 250 SC** as the first or last application in the spray programme.
- Apply **Chlorothanoniil 720 SC** at the rates indicated on the label.

The suggested spray programme on tomatoes will also control **early blight** (*Alternaria solani*).

CROP/DISEASE	DOSAGE RATE /h	TIMING OF APPLICATION
TOMATOES Late blight (<i>Phytophthora infestans</i>)	80 - 120 mℓ STER 250 SC /ha alternated with Chlorothanoniil 720 SC	Ground application: 80 - 120 mℓ STER 250 SC /100 ℓ water alternated with Chlorothanoniil 720 SC at 100 - 380 mℓ /100 ℓ water according to the disease pressure as specified on the label.

DRY BEANS

- **STER 250 SC** can be used in a spray programme with **Difenoconazole 250 EC**.
- **Do not** apply more than two applications of **STER 250 SC** to dry beans in the same season.
- **DO NOT** apply **STER 250 SC** as the first or last application in the spray programme.
- Never use **STER 250 SC** as a corrective treatment or after an unsuccessful application of any product.

CROP/DISEASE	DOSAGE RATE /h	TIMING OF APPLICATION
DRY BEANS Anthracnose (<i>Colletotrichum lindemuthianum</i>)	400 mL	Apply as a full cover preventative spray. Apply two consecutive sprays 14 days apart starting at flower initiation. Apply in sufficient water volumes to ensure adequate coverage. For optimal fungal disease control, apply in a spray programme together with Difenoconazole 250 EC . The above mentioned rate of STER 250 SC will also control rust (<i>Uromyces appendiculatus</i>) if present. Refer to Resistant Management Strategy above.

CANOLA

Ground application: Use a minimum water volume of 100 l/ha.

- **Do not** apply more than **THREE** applications of **STER 250 SC** to canola in the same season.
- **Do not** apply more than one (1) sequential applications of **STER 250 SC** before alternating with a fungicide in a different chemical group.

CROP/DISEASE	DOSAGE RATE /h	TIMING OF APPLICATION
CANOLA Blackleg (<i>Leptosphaeria maculans</i>) Alternaria blackspot (<i>Alternaria spp.</i>) Sclerotinia stem rot (<i>Sclerotinia sclerotiorum</i>)	Ground application 500 - 1000 mL/ha	Apply as a full cover preventive spray. DO NOT apply more than three (3) applications of STER 250 SC in the same season. DO NOT apply more than one (1) application of STER 250 SC before alternating with fungicides in a different chemical group. Generally, apply 500 mL/ha STER 250 SC at early bud, followed by 1000 mL/ha 45 days before harvest. A third application of 500 mL/ha can be made 30 days before harvest. Use the higher rate under conditions of high disease pressure. Targeted disease control: - For blackleg, applications should be made at the 2 to 4 leaf stage. - For <i>Alternaria</i> and <i>Sclerotinia</i> control, 660 to 1000 mL/ha should be applied at 10 to 25% flowering (7 to 10 days following first flowering). - For the control of <i>Alternaria</i> alone, apply 580 mL/ha at pod stage (95% petal fall).

CITRUS

• Tree preparation:

- Good coverage of the spray material is very important for optimum disease control. Adequate pruning of low hanging branches and windows in trees with dense foliage, are important practices that will allow for good coverage. Penetration windows must ideally be pruned at 45° angles to spray lanes on both sides of the tree rows for improved spray penetration and optimum spray coverage.
- Re-application will be necessary should it rain before the spray deposit has dried.
- Ensure that the water volumes will ensure complete coverage of the trees.
- Ensure complete coverage of the trees: Citrus: 30 - 50L /tree for older trees. Citrus: 20 – 40L /tree for younger trees.
- Remove all out of season citrus fruit before commencing with the spray program.
- Avoid the use of **STER 250 SC** on trees with visible symptoms of Phytophthora-root rot, nematode infestation, virus infection or any other physiological stress as effective product performance may be reduced.

CROP/DISEASE	DOSAGE RATE /h	TIMING OF APPLICATION
CITRUS (Excluding lemons) Citrus black spot <i>(Guignardia citricarpa)</i>	20 mℓ STER 250 SC PLUS EITHER 150 g of a registered Mancozeb or 150 g copper oxychloride 850 g/kg WP PLUS 300 - 500 mℓ light narrow range mineral oil or registered adjuvant	Start the treatment programme by applying Mancozeb (200 g/100 ℓ water) as soon as possible after 100% petal drop. Apply STER 250 SC 3 weeks later as a high volume spray (approximately mid to end October) and repeat with a 2nd application of STER 250 SC 6 weeks later (approximately end of November to beginning of December). If conditions remain favourable for infection a further 1 - 2 applications of Mancozeb (200 g/100 L ℓ water) should be made at 21 - 24 day intervals to provide protection during January and February. The recommended rate of copper oxychloride is based on a formulation containing 850 g copper oxychloride/kg. Remove all fruit before applying STER 250 SC . Apply Mancozeb (200 g/100 L) preventatively during September and October and follow with the STER 250 SC tank mixture during October and December. Apply additional sprays of Mancozeb during January and February.