

BARRIER 450 SC

Reg. No./Nr L7604, Act No./Wet Nr. 36 of/van 1947
Botswana Reg. No./Nr W130570, Act No./Wet Nr.18 of/van 1999
Namibian Reg. No./Namibiese Reg. Nr. . N-AR 1668

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

A suspension concentrate contact and local systemic fungicide for the control of fungal diseases as indicated on potatoes and tomatoes.

'n Suspensiekonsentraat kontak en lokaal sistemiese swamdoder vir die beheer van swamsiektes soos aangedui op aartappels en tamaties.

GROUPS/GROEPE	2	M3	FUNGICIDES / SWAMDODERS
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Active ingredients:

Maneb (dithiocarbamate).....	325 g/ℓ.....	Maneb (ditiokarbamaat)
Procymidone (dicarboximide).....	125 g/ℓ	Prosimidoon (dikarboksimid)
Zinc oxide	4.7 g/ℓ	Sinkoksied

Aktiewe bestanddele:

Net Volume



Netto Volume



WARNING

GHS Hazard Statements

May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of damaging the unborn child.
Very toxic to aquatic life with long lasting effects.

GHS Precautionary Statements

Do not breathe mist, vapours or spray.
Wash thoroughly after handling.



REGISTRATION HOLDER / REGISTRASIEHOUER:

Nulandis® (A division of AECI Limited)/ Nulandis® ('n Afdeling van AECI Beperk)

Reg. No. / Nr. 1924/002590/06

P.O. Box / Posbus 14418

Witfield, 1467

Tel : (011) 823 8000

www.aeciph.com/ www.aeciworld.com

IN CASE OF POISONING PLEASE PHONE / IN GEVAL VAN VERGIFTIGING SKAKEL ;
0861 555777 / 082 446 8946

Batch No:

Lotnommer:

DATE OF MANUFACTURE:

VERVAARDIGINGSDATUM:

UN No. / VN Nr. 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Maneb)

Pamphlet

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WITHHOLDING PERIODS - MINIMUM TIME BETWEEN LAST APPLICATION AND HARVEST.

Tomatoes.....	3 days
Potatoes.....	35 days

Handle with care.

Harmful if swallowed or inhaled.

Store in a cool dry place.

Store out of reach of children, uninformed persons and animals.

Store away from food and feeds.

If the chemical is allowed to get damp and then warmed up, it may generate flammable vapours and should therefore be kept away from sparks and open flames.

Re entry interval: Do not enter treated area before spray deposit has dried unless wearing protective clothing.

Aerial Application:

Notify all inhabitants of the immediate area to be sprayed and issue the necessary warnings. Do not spray over or allow drift to contaminate adjacent areas or water.

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 to 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:

GHS Precautionary Statements

Do not breathe mist, vapours or spray.

Wash thoroughly after handling.

Wear protective gloves, protective clothing, eye protection & face protection.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTRE/doctor if you feel unwell.

Wash with soap and water after use or accidental skin contact.

In the case of contact with eyes flush for at least 15 minutes. If irritation persists, get medical attention.

Use only in well ventilated areas.

Avoid drift of spray onto other crops, grazing, rivers, dams and areas not under treatment.

Clean applicator before using other remedies and dispose of wash water where it will not contaminate crops, grazing, rivers and dams.

Prevent contamination of food, feeds, drinking water and eating utensils.

Triple rinse the empty container: 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.

RELEVANT SUBSTANCES:

Substance name (IUPAC/EC)	Concentration % by weight	Classification
		EC1272/2008
Ethylene glycol	1-10%	Acute toxicity oral (Category 4) H302.
Maneb tech	20-30%	Skin sensitization (Category 1) H317. Eye irritation (Category 2) H319. Acute toxicity inhalation (Category 4) H332. Reproductive toxicity (Category 2) H361d. Aquatic acute 1 H400. Aquatic chronic 1 H410 M=10.
Procymidone tech	10-20%	Acute toxicity inhalation (Category 4) H332.

NOTE: The other ingredients not included above, do not cause or contribute towards the correct GHS classification of **BARRIER 450 SC** and is therefore, in terms of the South African Regulations for Hazardous Chemical Agents - 2021; Regulation 14(b), not listed.

FIRST AID:

In case of inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.

In case of skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation occurs.

In case of eye contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

In case of ingestion: Do **NOT** induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention

NOTE TO PHYSICIAN:

Treat symptomatically.

RESISTANCE WARNING:

For resistance management, Barrier 450 SC is a Group Codes 2 and M3 fungicide. Any fungus may contain individuals naturally resistant to Barrier 450 SC and other Group Codes 2 and M3 fungicides. The resistant individuals can eventually dominate the fungus if these fungicides are used repeatedly. The resistant fungi may not be controlled by Barrier 450 SC or any other Group Codes 2 and M3 fungicide.

To delay fungicide resistance:

- Avoid exclusive repeated use of fungicides from the same fungicide group code. Alternate or tank mix with registered products from different fungicide group codes.
- For tank mixing or alternation with products in different fungicide groups, refer to applicable individual product labels.
- Integrate other control methods (chemical, cultural, biological) into disease control programmes.

For specific information on resistance management contact the registration holder of this product

MODE OF ACTION:

Maneb is a non-specific thiol reactant, that inhibit respiration.

Procymidone affects mitogen-activated protein histidine kinase, in osmotic signal transduction.

DIRECTIONS FOR USE: Use only as directed**1. Compatibility**

- Compatible with most fungicides and insecticides but should not be used with alkaline products such as Lime Sulphur or Bordeaux Mixture.
- The addition of Bladbuff 5 is recommended to prevent alkaline hydrolysis. (First adjust the quality of the water followed by the addition of BARRIER 450 SC).

2. Mixing Instructions.

Fill the tank from ¼ to ½ full with water and start agitating (use mechanical or hydraulic agitation). Add the required quantity of BARRIER 450 SC to the tank while it is filled with water. Continue agitating the spray mixture constantly during mixing and spray operation.

3. High volume application:

If the dosage per 100 l water recommended is followed, ensure that total coverage of plants but without run-off is achieved.

Aerial Application:

Potatoes only: Do not commence aerial application before consulting your BARRIER 450 SC representative.

Aerial application of this product may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS Code 10118 (Aerial Application of Agricultural Remedies). It is important to 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. Ensure that fields are accurately marked and that the aerial spray operator knows exactly which fields to spray. Therefore it is essential that the following criteria are met:

Application parameters:

Volume: A minimum volume of 30 - 40 litres per hectare 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: A droplet coverage of 50 – 70 droplets per cm² must be recovered at the target. The CV for droplet distribution must not exceed 40 %.

Droplet size: A droplet spectrum with a VMD of 250 microns is recommended. Ensure that the production of fine droplets (less than 150 microns - high drift & evaporation potential) is restricted to a minimum.

Flying height: The height of the spray boom should be maintained at 3-4 meters above the target. Do not spray when aircraft is in a climb, at the top or during a dive, or when banking. The following flying heights must be maintained above the target area. At wind speeds of:

0 – 8 km/h – 3m

8 – 15 km/h – 2m

at more than 15 km/h – do not spray.

Equipment:

Use suitable atomising equipment (hydraulic nozzles or rotary atomisers) that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product either through endodrift (within target field) or exodrift (outside target field). The operator must use a setup that will produce a droplet spectrum with the lowest possible relative span.

All nozzles / atomisers should be positioned within the inner 60% to 75% of the wingspan to prevent droplets from entering the wingtip vortices.

Use a conventional boom equipped with hollow cone spray nozzles, e.g. D10-45.

Meteorological conditions:

The difference in temperature between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 8°C. The addition of a suitable anti-evaporant is recommended if the VMD of the droplets is less than 200-250 microns.

Aerial application of this product must not be done under turbulent, unstable conditions during the heat of the day when rising thermals and downdraughts occur. Also note that the application of this product under temperature inversion conditions (spraying in or above the inversion layer) 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 the movement 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.

CROP / DISEASE	DOSAGE / 100 ℓ WATER	REMARKS
POTATOES Early blight (<i>Alternaria solani</i>)	200 ml (0,4 – 2 ℓ / ha)	Apply as a high volume spray at 200-1000 ℓ spray mixture per ha and ensure good coverage of entire plant above ground. Repeat application at intervals of 7 to 14 days and use the higher dosage and volume at shorter intervals under favourable disease conditions and especially after bloom when plants are more susceptible to early blight and a larger plant surface must be protected.
Late blight (<i>Phytophthora infestans</i>)	200 – 400 ml (0,4 – 4 ℓ / ha)	Under conditions which are extremely favourable for Late blight development, Barrier 450 SC must be alternated with a registered systemic / eradivative fungicide. Do not apply more than 8ℓ Barrier 450 SC / ha / season. Can also be aerially applied in not less than 30ℓ water per ha.

CROP / DISEASE	DOSAGE / 100 ℓ WATER	REMARKS
TOMATOES Late blight (<i>Phytophthora infestans</i>) Early blight (<i>Alternaria solani</i>) Septoria leafspot (<i>Septoria lycopersici</i>)	200 ml	For the curative control of Early blight and Septoria leaf spot and preventative control of late blight, commence with application after plants are established and apply preventively at intervals of 5 to 10 days depending on weather conditions which may favour the disease and decrease the fungicidal activity. Apply 200 to 2000 ℓ spray mixture per hectare depending on plant size. For the control of Early blight, thorough coverage of foliage is necessary. For low volume application, concentration of fungicide in the spray mixture should be increased proportionately. Do not use on tomato seedbeds.

