

BEFORE USING THIS PRODUCT READ THE LABEL CAREFULLY!

SHAKE THE BOTTLE WELL BEFORE USE.

Fungicide



CHLORONIL 500 SC

Reg. No. L 7394 Act/Wet No. 36 of/van 1947

1: 11/11/03-June 2017

A suspension concentrate contact fungicide for the preventative control of diseases in crops and ornamentals as indicated.

'n Suspensie konsentraat kontak swamdoder vir die voorkomende beheer van siektes in gewasse en sierplante soos aangedui.

ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL

chlorothalonil (phthalonitrile) **500 g/l** chlorotalonil (phthalonitriël)

FRAC FUNGICIDE GROUP CODE **M5** FRAC SWAMDODER GROEPKODE



villa

Registration holder / Registrasiehouer:

Universal Crop Protection (Pty) Ltd.

Co. Reg. No. / Mpy. Reg. Nr. 1983/008184/07

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UN Number: 3082

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**CAUTION
VERSIGTIG**



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UNIVERSAL CROP PROTECTION (PTY) LTD.

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P.O. Box / Posbus 801, KEMPTON PARK, 1620

Tel. (011) 396 2233

CAUTION / VERSIGTIG**WARNINGS****Withholding periods:**

Minimum time between the last application and harvest or feeding:	
Potatoes	3 days
Beans	3 days
Peas	6 days
Cucurbits	3 days
Tomatoes	3 days
Hay (Beans, Groundnuts & Peas)	42 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.

- Handle with care.
- Irritant to eyes, nose, throat and skin and may cause sensitization by skin contact.
- Harmful if inhaled or swallowed.
- Toxic to fish.
- 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 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

- Avoid inhalation of the spray mist.
- 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 while applying, 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 spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams.
- **TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining 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 one third of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.
- 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.

RESISTANCE WARNING

CHLORONIL 500 SC is a group code M5 fungicide. Any fungus population may contain individuals naturally resistant to **CHLORONIL 500 SC** and other group code M5 fungicides. The resistant individuals can eventually dominate the fungus population if these fungicides are used repeatedly. These resistant fungi may not be controlled by **CHLORONIL 500 SC** or any other group code M5 fungicide.

To delay fungicide resistance:

- avoid exclusive repeated use of fungicides 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.

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

DIRECTIONS FOR USE: Only use as directed.

Compatibility:

- The compatibility of **CHLORONIL 500 SC** in tank mixtures with other products has not been confirmed and can be influenced by the formulations involved, as well as the water quality.
- A physical compatibility test of all products involved is recommended, before mixing, as formulations can be altered and water quality can vary from area to area.
- Always consult the labels of products to be tank mixed with **CHLORONIL 500 SC**.
- Do not mix **CHLORONIL 500 SC** with any other agricultural remedies or fertilizers, when it will be applied by means of a centre pivot irrigation system.

Mixing instructions:

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

- Half fill the spray tank with clean water.
- Add the required quantity of **CHLORONIL 500 SC** to the mixing tank. Ensure continuous agitation.
- If other products will be tank mixed with **CHLORONIL 500 SC**, the following mixing sequence, as applicable, must be used: buffer/acidifier; wettable powder or granules; suspension concentrate; emulsifiable concentrate; wetter. 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.

General:

- **CHLORONIL 500 SC** must be applied as a preventative treatment against diseases as indicated.
- Thorough coverage of the stems as well as both leaf surfaces is very important. A high spray pressure and adequate volume of water is therefore recommended.
- **CHLORONIL 500 SC** must be applied more frequently during periods of wet or humid conditions that favour a high disease pressure, compared to drier conditions.
- Never exceed a 21 day interval between applications. Repeat application if 13 mm natural or artificial rain is recorded within 72 hours after application.

Aerial application: (Potatoes, Beans and Groundnuts only)

Aerial application of **CHLORONIL 500 SC** 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 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 to 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 aurally at a lower volume rate than recommended above.
- Droplet coverage: 50 to 70 droplets per cm² must be recovered at the target area.
- Droplet size: A droplet spectrum with a VMD of 200 to 250 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 to 4 metres above the target. Do not spray when the aircraft is diving, climbing or when banking.
- Use suitable atomizing 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 atomizers within the inner 60 to 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 per hour.
- 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:
 - a) reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage),
 - b) 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

Centre pivot application (Potatoes only):

- Warning: "Up to Date" potatoes, cultivated during January to April in the warmer, drier areas under centre pivot systems (e.g. Northern Province) are highly susceptible to Late blight (*Phytophthora infestans*) infections. It is recommended that under these conditions, **CHLORONIL 500 SC** must be applied at least every 4 to 5 days at full dosage rate.
- Do not apply **CHLORONIL 500 SC** in a tank mix with any other agricultural chemical or fertilizer.
- Only use suitable centre pivot irrigation equipment.
- The centre pivot system and injection equipment must be operated by means of a positive displacement metering pump at normal pressure. Ensure that the manufacturer's recommendations for both equipment systems are followed.
- The irrigation system must not be operated without safety valves so as to prevent back siphoning and subsequent contamination of the water source.
- Connect the holding tank and injector to the discharge side of the irrigation line.
- **CHLORONIL 500 SC** can be applied either during the normal irrigation cycle, or as a separate application afterwards, or even when irrigation is not needed.
- After completion of the injection cycle, the injector must be shut off, but the centre pivot must still be running until all **CHLORONIL 500 SC** has been flushed out of the system.
- Do not mix **CHLORONIL 500 SC** with any other agricultural remedies or fertilizers, when it will be applied by means of centre pivot irrigation system.
- Ensure a uniform application of water, to obtain a thorough and even coverage of **CHLORONIL 500 SC** over the whole field.

Calibration:

- Fill the injection equipment's tank with clean water.

- Calibrate the metering pump at the required setting by operating the centre pivot for 1 cycle. Measure the time period to complete 1 cycle and the volume of water injected during one complete circle as well as the area (hectares) covered.
- The recommended quantity of **CHLORONIL 500 SC** for the area covered in one circle must be mixed in the same volume of water used during the calibration and injected continuously through a revolution of the centre pivot.

APPLICATION RATES

Crop / Disease	Dosage	Remarks
Potatoes Early blight (<i>Alternaria</i> spp.) & Late blight (<i>Phytophthora infestans</i>)	Commence application as a preventative treatment programme (normally when plants start flowering or if environmental conditions favour development and spread of the diseases). Continue treatment until plants start dying back above soil.	
	Low infection: 1.0 to 1.5 ℓ / ha	<u>Ground application:</u> Full cover spray using at least 500 litres water per hectare. Use the lower dosage under dry land conditions. Repeat application weekly. The higher dosage rate can be applied every 10 days.
	Low infection: 1.5 ℓ / ha	<u>Aerial application:</u> As indicated above in 30 litres water per hectare.
	High infection: 2.75 ℓ / ha	<u>Ground application:</u> Full cover spray using 500 to 1500 litres water per hectare, depending on plant size and density of foliage. Repeat at 5 to 7 day intervals.
	High infection: 2.75 ℓ / ha	<u>Aerial application:</u> As indicated above in 30 litres water per hectare.
	Centre pivot application: 2.75 ℓ / ha	Commence the spray programme 14 days after emergence. Do not allow more than 10 days between applications. Continue treatment until plant parts above soil, start dying back. Also refer to “ DIRECTIONS FOR USE, Centre pivot application ”.
Beans Rust (<i>Uromyces appendiculatus</i>)	Dry land cultivation: 1.0 to 2.0 ℓ / ha	<u>Ground application:</u> Apply as a preventative treatment in a 7 to 14 day spray programme or when first disease symptoms are noticed. Apply the dosage according to the growth stage of the crop. Apply in 250 to 500 litres water per hectare (full cover spray). <u>Aerial application:</u> Apply as above in 30 litres water per hectare.
	Irrigated fields: 2.0 ℓ / ha	<u>Ground application:</u> Apply in 250 to 500 litres water per hectare (full cover spray) according to the growth stage of the crop. <u>Aerial application:</u> Apply in 30 litres water per hectare. NOTE Do not apply less than 2.0 litres per hectare CHLORONIL 500 SC on irrigated beans.
Peas <i>Ascochyta</i> blight (<i>Ascochyta</i> spp.)	Apply as a preventative treatment in a spray programme with 10 to 14 day intervals. Apply from early flowering stage or as soon as the first disease symptoms are noticed. Refer to “ DIRECTIONS FOR USE, General ” above.	
	2.0 ℓ / ha	<u>Ground application:</u> Full cover spray in 500 to 1500 litres water per hectare.
	2.2 ℓ / ha	<u>Aerial application:</u> Apply as directed under “ DIRECTIONS FOR USE, Aerial application ” but use 40 litres water per hectare.

Crop / Disease	Dosage	Remarks
Groundnuts Leafspot (<i>Cercospora</i> spp., <i>Phoma</i> spp.) & <i>Botrytis</i> rot (<i>Botrytis</i> spp.)	Dry land cultivation: 1.0 ℓ / ha	Low infection: Apply as a preventative treatment full cover spray. Use at least 500 litres water per hectare at a minimum pressure of 500 kPa. Repeat every 10 to 14 days.
	Dry land cultivation: 2.25 ℓ / ha	High infection: When climatic conditions favour high infection pressure and disease development, the dosage must be increased to 2.25 litres per hectare. Apply in 500 to 1500 litres water per hectare and ensure thorough coverage of the leaves.
	Irrigated fields: 2.25 ℓ / ha	<u>Ground application:</u> Apply CHLORONIL 500 SC in up to 1500 litres water per hectare at a pressure of 500 kPa, to ensure complete coverage. Adjust the spray volume according to plant size and growth. Repeat at 7 to 10 day intervals.
	<u>Aerial application:</u> Aerial application is an emergency measure under unfavourable application and adverse weather conditions. Apply as directed under “ DIRECTIONS FOR USE, Aerial application ”, but use 50 litres water per hectare.	
PLEASE NOTE Groundnuts under irrigation: <ul style="list-style-type: none"> The disease can spread rapidly under intensive crop cultivation. CHLORONIL 500 SC is a preventative fungicide and should therefore be applied from late December (approximately 6 to 10 weeks after planting, or earlier if environmental conditions favour disease development). Do not use less than 2.25 litres per hectare CHLORONIL 500 SC on mature plants. 		
Lawns and Turf Dollar spot (<i>Sclerotinia</i> spp.), Brown patch (<i>Rhizoctonia</i> spp.) & Fading out (<i>Helminthosporium</i> spp.)	5.0 ℓ / ha	Preventative treatment: Commence treatment when conditions favour development of the diseases. Apply in a sufficient water volume to ensure effective coverage. Repeat at 7 to 10 day intervals.
	7.5 to 10.0 ℓ / ha	Corrective treatment: Apply in a sufficient water volume to ensure effective coverage. Two treatments should be applied within a week, if the disease is already present. Thereafter, the preventative programme, as described above, can be followed.
Cucurbits Downy mildew (<i>Pseudoperenospora</i> spp.) & Anthracnose (<i>Colletotrichum</i> spp.)	1.5 to 2.75 ℓ / ha	Apply as a preventative treatment at 7 to 10 day intervals. Ensure complete coverage of both leaf surfaces, to obtain effective control. Apply in not less than 500 litres water per hectare. Use the higher dosage rate when climatic conditions favour development of the diseases.
Roses Blackspot (<i>Actinonema</i> spp.)	275 ml / 100 ℓ water	Apply as a full cover spray in a preventative control programme. Repeat application at 7 to 14 day intervals. Apply as above when climatic conditions favour disease development.
Gladioli Leafspot (<i>Botrytis</i> spp.)	275 ml / 100 ℓ water	Apply as a full cover spray in a preventative control programme. Repeat application at 7 to 14 day intervals when climatic conditions favour disease development. Do not apply on gladioli during flowering.

Crop / Disease	Dosage	Remarks
Tomatoes Early blight (<i>Alternaria</i> spp.), Late blight (<i>Phytophthora infestans</i>), Leafspot (<i>Septoria</i> spp.) & <i>Botrytis</i> (<i>Botrytis</i> spp.)	Apply as a preventative control programme. If there is a threat of <i>Botrytis</i> , apply the higher dosage rate as mentioned below, weekly for both types of application.	
	Low disease pressure: 150 ml / 100 ℓ water	High volume application: Apply at ± 1000 litres spray mixture per hectare on mature plants. Apply at least 1.5 litres CHLORONIL 500 SC per hectare on mature plants. Repeat at 10 to 14 day intervals.
	High disease pressure: 275 ml / 100 ℓ water	High volume application: Apply at ± 1000 litres spray mixture per hectare on mature plants. Apply at least 2.75 litres CHLORONIL 500 SC per hectare on mature plants. Repeat at 7 to 10 day intervals.
	Low disease pressure: 300 ml / 100 ℓ water	Low volume application: Apply at ± 500 litres spray mixture per hectare on mature plants. Apply at least 1.5 litres CHLORONIL 500 SC per hectare on mature plants. Repeat at 10 to 14 day intervals.
	High disease pressure: 550 ml / 100 ℓ water	Low volume application: Apply at ± 500 litres spray mixture per hectare on mature plants. Apply at least 2.75 litres CHLORONIL 500 SC per hectare on mature plants. Repeat at 7 to 10 day intervals.