

Fungicide



MISSION 720 SC

Reg. No. L 8432 Act No. 36 of 1947
N-AR 1298 / W1301395

3: 24/1/2023 – Feb2023

A suspension concentrate contact fungicide for the preventative control of diseases on crops as listed.

ACTIVE INGREDIENT

chlorothalonil (phthalonitrile) 720 g/l

GROUP

M

FUNGICIDE



DANGER

Hazard Statements:

May be harmful in contact with skin.
Causes mild skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
Fatal if inhaled.
May cause respiratory irritation.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

Obtain, read and follow all safety instructions before use.
Avoid release into the environment.
If skin irritation or rash occurs: Get medical help.



villa

UN Number: 2902

Registration holder: VILLA CROP PROTECTION (PTY) LTD.

Co. Reg. No. 1992/002474/07

PO Box 10413, Aston Manor, 1630

Tel. (011) 396 2233

Website: www.villacrop.co.za

24 HR EMERGENCY NUMBERS:

Griffon Poison Centre: +27 82 446 8946

24 HR Transport / Spill Emergency no: (Hazcall24) +27 86 044 4411

(Client: Villa Crop Protection)

DIRECTIONS FOR USE ENCLOSED

Batch Number:

Date of Manufacture:

REFER TO DETAILS AS PRINTED ON CONTAINER / BAG

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FRAC FUNGICIDE GROUP CODE: M

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PO Box 10413, KEMPTON PARK, 1620,

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WARNINGS**Withholding periods:**

Minimum time between the last application and harvest or grazing:	
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.

Hazard statements:

May be harmful in contact with skin.
Causes mild skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
Fatal if inhaled.
May cause respiratory irritation.
Suspected of causing cancer.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

- 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 climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the diseases 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:

Obtain, read and follow all safety instructions before use.
Do not breathe dust, fume, gas, mist, vapours, or spray.
Wash hands and face thoroughly after handling. Do not touch eyes.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release into the environment.
Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
In case of inadequate ventilation wear respiratory protection.
Collect spillage.
IF ON SKIN: Get medical help. Wash with plenty of water and non-abrasive soap.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned, get medical advice.
If skin irritation or rash occurs: Get medical help.
Get emergency medical help immediately.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/container in accordance with local regulations.

- 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 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.
- **Never** re-use the empty container for any other purpose.
- Prevent contamination of food, feeds, drinking water and eating utensils.

Relevant hazardous components	
Chlorothalonil	720 g/l
Monoethylene glycol	< 100 g/l
Tensiofix L051	< 10 g/l
Proxel GXL	< 100 g/l

RESISTANCE WARNING

MISSION 720 SC is a group code M fungicide. Any fungus population may contain individuals naturally resistant to **MISSION 720 SC** and other group code M fungicide. The resistant individuals can eventually dominate the fungus population if these fungicides are used repeatedly. These resistant fungi may not be controlled by **MISSION 720 SC** or any other group code M 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.

Mode of Action: Chlorothalonil chemically reacts with, and depletes, thiols (particularly glutathione), resulting in disruption of glycolysis and energy production. **MISSION 720 SC** has non-systemic, foliar fungicide with protective activity.

DIRECTIONS FOR USE: Only use as directed.

Compatibility:

- The compatibility of **MISSION 720 SC** in tank mixtures with other products has not been confirmed and can be influenced by the formulations involved as well as 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 **MISSION 720 SC**.
- Do not mix **MISSION 720 SC** with any other agricultural remedies or fertilizers, when it will be applied by means of centre pivot irrigation system.

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. **Immediately consult a doctor.** All of the ocular exposures to chlorothalonil involve intense pain with mild to moderate conjunctivitis and irritation of the corneal surface.

- **Inhalation:** Remove person from contaminated atmosphere to fresh air. If shortness of breath or asphyxia has occurred, give oxygen (if available) and commence resuscitation if necessary. **Seek urgent medical advice.**
- **Skin:** Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical attention if irritation persists.
- **Eyes:** Flush eyes with clean water for at least 15 to 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention.**
- **Ingestion:** Seek medical attention or call a poison control centre for treatment advice. Do not induce vomiting unless instructed to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person. If the person is alert, rinse mouth thoroughly with water.

ADVICE TO PHYSICIAN

Very high doses may cause a loss of muscle coordination, rapid breathing, nose bleeding, vomiting, hyperactivity, and death. Dermatitis, vaginal bleeding, bright yellow and/or bloody urine, and kidney tumours may also occur. Chlorothalonil has caused irritation of the skin and mucous membranes of the eye and respiratory tract on contact.

Treat symptomatically. Workers exposed to chlorothalonil during production and use has developed eye irritation and severe skin irritation. **Chlorothalonil** has caused allergic reactions in some workers. For temporary allergic reactions, treat with antihistamines or steroid creams and/or systemic steroids.

Mixing instructions:

NOTES

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

- Half fill the spray tank with clean water.
- Add the required quantity of **MISSION 720 SC** to the mixing tank. Ensure continuous agitation.
- If other products will be tank mixed with **MISSION 720 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 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:

- **MISSION 720 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.
- **MISSION 720 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: (ONLY Potatoes, Beans and Groundnuts).

Aerial application of **MISSION 720 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 aerially 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 aircraft is diving, climbing or when banking.
- Use 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 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 (ONLY Potatoes):

- Warning: "Up to Date" potatoes, cultivated during January to April in the warmer, drier areas under centre pivot systems, (e.g. Northern Province, etc.) are highly susceptible to Late blight (*Phytophthora infestans*) infections. It is recommended that under these conditions, **MISSION 720 SC** must be applied at least every 4 to 5 days at full dosage rate (2.75 litres per hectare).
- 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. Follow both equipment systems' manufacturer recommendations.
- 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.
- **MISSION 720 SC** can be applied either during the normal irrigation cycle, or as a separate application afterwards, 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 **MISSION 720 SC** has been flushed out of the system.
- Ensure a uniform centre pivot application, to obtain a thorough and even coverage of **MISSION 720 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. Subsequently measure (a) the time period to complete one (1) cycle, (b) the volume of water injected during one (1) complete circle and (c) the area (hectares) covered.

- The recommended quantity of **MISSION 720 SC** for the area covered in one (1) circle must be mixed in the same volume of water used during the calibration and injected continuously, during one rotation 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 disease). Continue treatment programme until plants start dying back above the soil.	
	Low infection: 0.7 to 1.0 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: 1.0 ℓ / ha	<u>Aerial application:</u> As indicated above in 30 litres water per hectare.
	High infection: 2.0 ℓ / ha	<u>Ground application:</u> Full cover spray using at 500 to 1500 litres water per hectare, depending on plant size and density of foliage. Repeat at 5-to-7 day intervals.
	High infection: 2.0 ℓ / ha	<u>Aerial application:</u> As indicated above in 30 litres water per hectare.
	Centre pivot application: 2.0 ℓ / ha	Commence the spray programme 14 days' post-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: 0.7 to 1.4 ℓ / ha	<u>Ground application:</u> Apply as a preventative treatment in a 7-to-14-day spray programme or when the first disease symptoms are noticed. Apply the dosage according to the growth stage of the crop 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: 1.4 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 1.4 litres per hectare MISSION 720 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 days' intervals. Apply from early flowering stage or when first disease symptoms are noticed. Refer to " DIRECTIONS FOR USE ", " General " above.	
	1.4 ℓ / ha	<u>Ground application:</u> Full cover spray in 500 to 1500 litres water per hectare.
	1.5 ℓ / ha	<u>Aerial application:</u> Apply as directed under " DIRECTIONS FOR USE ", " Aerial application ", but using 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: 0.7 ℓ / ha	<u>Low infection, Ground application:</u> 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: 1.5 ℓ / ha	<u>High infection, Ground application:</u> When climatic conditions favour high infection pressure and disease development, the dosage must be increased to 1.5 litres per hectare. Apply in 500 to 1500 litres water per hectare and ensure thorough coverage of the leaves.
	Irrigated fields: 1.5 ℓ / ha	<u>Ground application:</u> Apply MISSION 720 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.
	NOTE Groundnuts under irrigation: <ul style="list-style-type: none"> The disease can spread rapidly under intensive crop cultivation. MISSION 720 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 1.5 litres per hectare MISSION 720 SC on mature plants. 	
Cucurbits Downy mildew (<i>Pseudoperenospora</i> spp.) & Anthracnose (<i>Colletotrichum</i> spp.)	1.0 to 2.0 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.)	190 ml / 100 ℓ water	Apply as a full cover spray in a preventative control programme. Repeat application at 7-to-14 day intervals.
Gladioli Leafspot (<i>Botrytis</i> spp.)	190 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: 100 ml / 100 l water	<u>High volume application:</u> Apply at ± 1000 litres spray mixture per hectare on mature plants. Apply at least 1.0 litre MISSION 720 SC per hectare on mature plants. Repeat at 10-to-14 day intervals.
	High disease pressure: 190 ml / 100 l water	<u>High volume application:</u> Apply at ± 1000 litres spray mixture per hectare on mature plants. Apply at least 2.0 litres MISSION 720 SC per hectare on mature plants. Repeat at 7-to-10 day intervals.
	Low disease pressure: 210 ml / 100 l water	<u>Low volume application:</u> Apply at ± 500 litres spray mixture per hectare on mature plants. Apply at least 1.0 litre MISSION 720 SC per hectare on mature plants. Repeat at 10-to-14 day intervals.
	High disease pressure: 380 ml / 100 l water	<u>Low volume application:</u> Apply at ± 500 litres spray mixture per hectare on mature plants. Apply at least 2.0 litres MISSION 720 SC per hectare on mature plants. Repeat at 7-to-10 day intervals.