

GEBRUIKSAANWYSINGS INGESLUIT

DIRECTIONS FOR USE ENCLOSED

VERWYS NA BESONDERHEDE
Date formulated: **GEDRUK OP HOUER/SAK**
Formuleringsdatum: **GEDRUK OP HOUER/SAK**

REFER TO DETAILS PRINTED
ON CONTAINER/BAG
Batch number:
Lotnummer:

FOR AGRICULTURAL USE ONLY!

BEFORE USING THIS PRODUCT READ THE LABEL CAREFULLY!

Insecticide



CHLORPYRIFOS 480 EC

Reg. No. L 7183 Act/Wet No. 36 of/van 1947
N-AR 0993

3: 18/9/2012 – May2017

An emulsifiable concentrate contact insecticide for the preventative and corrective control of pests on various crops as listed.

'n Emulgeerbare konsentraat kontak insekdoder vir die voorkomende en korrektiewe beheer van plae op verskeie gewasse soos aangedui.

ACTIVE INGREDIENT / AKTIEWE BESTANDDEEL

chlorpyrifos (organophosphate) **480 g/l** chlorpyrifos (organofosfaat)

IRAC INSECTICIDE GROUP CODE **1B** IRAC INSEKDODER GROEPKODE



villa

Registration holder / Registrasiehouer:

Villa Crop Protection (Pty) Ltd.

Co. Reg. No. / Mpy. Reg. Nr. 1992/002474/07

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Willow Set & Print 011 394-4486



HARMFUL
SKADELIK



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Registration holder / Registrasiehouer:

VILLA CROP PROTECTION (PTY) LTD.

Co. Reg. No. 1992/002474/07 Mpy. Reg. Nr.

PO Box / Posbus 10413, ASTON MANOR, 1630, Tel. (011) 396 2233

**HARMFUL****SKADELIK****WARNINGS****Withholding periods:**

Minimum time between last application and harvest or feeding:	
Apples (summer application)	40 days
Citrus	60 days
Carrots and Lettuce	21 days
Tobacco	50 days
Pastures	14 days
Grain Sorghum, Dry beans, Wheat and Maize	32 days
Wheat and Maize (for grazing)	35 days
Cabbage, Brussel sprouts, Potatoes, Cauliflower and Broccoli	7 days
Bananas and Grapes	28 days
Tomatoes	4 days

IN THE CASE OF CROPS INTENDED FOR EXPORT, CONFIRM WITHHOLDING PERIODS WITH THE RELEVANT EXPORT ORGANISATION. IF THIS PRODUCT IS USED ACCORDING TO THE RECOMMENDATIONS ON THIS LABEL, LOCAL MRL VALUES WILL NOT BE EXCEEDED. HOWEVER, VILLA CROP PROTECTION (PTY) LTD. CANNOT ACCEPT RESPONSIBILITY FOR EXPORTED CROPS EXCEEDING THE IMPORT TOLERANCES OF OTHER COUNTRIES.

- Handle with extreme care.
- Poisonous when absorbed through the skin, swallowed or inhaled.
- Toxic to fish, bees and wildlife.
- **Flammable** – do not store near open flames.
- Store under lock and key in a cool place.
- Store away from food and feedstuffs.
- Keep out of reach of children, uninformed persons and animals.
- Re-entry: Do not enter treated area within 1 day after treatment unless wearing protective clothing.
- **In case of poisoning call a physician and make this label available to him/her.**

Aerial application:

Notify all inhabitants in the immediate area to be sprayed and issue the necessary warnings. Do not spray over or allow drift to contaminate water and 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 pests to the remedy concerned, as well as by the method, time and accuracy of application. The registration holder further 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 event of any uncertainty.

PRECAUTIONS

- Avoid inhalation of the spray mist.

- Wear a face shield, a respirator and rubber gloves when handling the concentrate, preparing the spray mixture and during application.
- Wash with soap and water after use and after accidental skin contact.
- Wash contaminated clothing after use.
- Do not eat, drink or smoke whilst mixing or applying the product or before washing hands and face and change of clothing.
- Prevent drift onto other crops, grazing, rivers, dams or areas not under treatment or to nearby water sources.
- Thoroughly 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 a 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.

SYMPTOMS OF HUMAN POISONING

Nausea, headache, tiredness, giddiness, blurred vision and pupillary constriction, vomiting, abdominal pain, diarrhoea, sweating and salivation. Confusion, ataxia, slurred speech, loss of reflexes are some of the central nervous system effects, which may lead to misdiagnosis as acute alcoholism. After inhalation of vapours effects appear within minutes including: ocular and respiratory effects, marked miosis, ocular pain, conjunctival congestion, diminished vision, ciliary spasm and brow ache. With acute systemic absorption: rhinorrhea, hyperemia of upper respiratory tract, tightness in the chest and wheezing respiration. Severe intoxication: salivation, involuntary defecation and urination, sweating, lacrimation, penile erection, bradycardia and hypotension.

FIRST AID TREATMENT

- **Inhalation:** Remove patient from source of poisoning and keep him/her calm and reassured.
- **Skin contact:** Remove contaminated clothing and rinse contaminated body area thoroughly with plenty of soap and cold water. Do not rub the skin.
- **Eye contact:** Flush contaminated eyes with clean running water for at least 15 to 20 minutes, holding the eyelid(s) open.
- **If swallowed:** If water diluted mixture has been swallowed, rinse mouth thoroughly with water. **Do not** induce vomiting due to the aromatic solvent. **Seek medical attention immediately.** Administer artificial respiration or closed chest cardiac massage if necessary. **Do not** apply direct mouth-to-mouth respiration. **Never** give anything by mouth to an unconscious person. **Take the patient immediately to the nearest physician.**

NOTE TO PHYSICIAN

Administer atropine as early as possible in an adequate dosage, until signs of atropinisation (dry flushed skin, tachycardia and pulse rate of over 120 per minute) occur. To prevent gastrointestinal absorption in the unconscious that have swallowed this product, perform stomach lavage using bicarbonate solution and activated charcoal. In less severe cases begin with 2 mg atropine intravenously for adults, or 0.05 mg atropine/kg body weight for children under 12 years of age and repeat administration of atropine at 15 to 30 minute intervals. Morphine and similar drugs are contra-indicated. Avoid aminoglycosides and succinylcholine, which have a blocking effect on the neuromuscular junction. Phenothiazines, reserpine and theophylline are contra-indicated.

RESISTANCE WARNING

CHLORPYRIFOS 480 EC is a group code 1B insecticide. Any insect population may contain individuals naturally resistant to **CHLORPYRIFOS 480 EC** and any other group code 1B insecticide. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **CHLORPYRIFOS 480 EC** or any other group code 1B insecticide. To delay insecticide resistance:

- avoid exclusive repeated use of insecticides from the same insecticide group code. Alternate or tank mix with products from different insecticide group codes,
- integrate other control methods (chemical, cultural, biological) into insect control programmes.

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

DIRECTIONS FOR USE: Use only as directed.

Dosage rates indicated per 100 litres of water are for high volume spraying.

General directions:

Use at all times correctly calibrated and suitable equipment in good working condition, to ensure wetting of all parts of the plant thoroughly.

Aerial application:

Aerial application of **CHLORPYRIFOS 480 EC** 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 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: 30 to 40 droplets per cm² must be recovered at the target area.
- Droplet size: A droplet spectrum with a VMD of 250 to 280 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 dives, is in a climb 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.

APPLICATION RATES

Crop / Pest	Dosage Rate	Remarks
<u>Apples, Pears, Peaches, Plums and Apricots</u> Perni-cious scale and Red scale	75 ml / 100 ℓ water	Apply only when the trees are dormant. At least two high volume sprays must be applied with 4-week intervals, one before and one after pruning.
<u>Apples and Pears</u> Mealy bug	75 ml to 100 ml / 100 ℓ water (1.7 to 2.5 ℓ / ha)	Dormant applications only: Apply two high volume sprays. First spray with delayed foliage oil spray or 3 weeks before budswell/greentip. Second spray at budswell/greentip. Use the higher dosage rate, where heavy fruit infestation was experienced the previous season.

Crop / Pest	Dosage Rate	Remarks
Apples Woolly aphid	75 ml / 100 ℓ water	Summer spray only: Pre-harvest Woolly aphid control: Apply as a full cover spray when the pest starts moving upwards into the trees or when first noticed. If colonization is observed after the initial application, apply a second spray not later than 40 days before harvest. The required spray volume for a specific growth stage should be accurately calculated according to the Unrath method (Deciduous Fruit Grower, November 1986). The spray applied to control Woolly aphid will also control Codling moth for a period of 14 days. Spray Golden Delicious apples only if absolutely necessary, as ringmarking of fruit may occur under certain growing conditions. CHLORPYRIFOS 480 EC spray will suppress Pernicious scale and Mealy Bug. Post-harvest Woolly aphid control: If necessary apply CHLORPYRIFOS 480 EC spray as soon as possible after harvest.
Bananas Flat mite and Thrips	75 ml / 100 ℓ water	Ground application only: Apply as a high volume spray and ensure good coverage of each bunch. Commence spraying at the end of July and repeat every 4 weeks until February.
Carrots Cutworms (Western Cape only)	1000 ml / ha	Apply as an overall application when plants emerge. Repeat application at intervals of 2 to 3 weeks. Apply in at least 500 litres water per hectare.
Cruciferae Aphids (<i>Brevicoryne brassicae</i>) and caterpillars of the Diamond back moth and Greater cabbage moth	50 ml / 100 ℓ water	Apply when the pest is first noticed. Do not apply less than 500 litres water per hectare. Ensure thorough coverage of the whole plant. When aphids or caterpillars are already in the cabbage head, or in the clusters of leaves of the Brussel sprouts, variable control can be expected. The adding of a wetting agent is recommended. Repeat application if necessary.
Dry Beans and Grain Sorghum Black maize beetle	10 ml / 100 m row length in 3 ℓ water	Row application: Spray into the planting furrow, just behind the planter shoe, before closing the furrow.
Lettuce Cutworms (Western Cape only)	1000 ml / ha	Apply as an overall application when plants emerge. Repeat application at intervals of 7 to 14 days, when necessary. Apply in at least 500 litres water per hectare.
Ornamentals African bollworm and Aphids	50 ml / 100 ℓ water	Apply as a full cover spray as soon as the pest is noticed and repeat when necessary.
Mealy bug and Australian bug	100 ml / 100 ℓ water	Apply as a full cover spray as soon as the pest is noticed and repeat when necessary.
Pernicious scale and Red scale	75 ml / 100 ℓ water	Apply two sprays 4 weeks apart, thoroughly wetting the wood, while plants are dormant.
Two spotted spider mite (Red spider mite)	100 ml / 100 ℓ water	Apply as a full cover spray, ensuring under leaf coverage. Repeat as necessary every 14 days.
Pastures Army worm	250 ml / ha	Apply in 200 to 500 litres water per hectare.

Crop / Pest	Dosage Rate	Remarks
Citrus Red scale (<i>Aonidiella aurantii</i>) and Mussel scale	100 ml / 100 l water	Preventative treatment: Usage in orchards where Red Scale is under commercial control. 1. Apply as a full cover spray at 80 to 100 % petal fall. 2. In hot low lying areas with special reference to young trees or in other areas where a second spray is considered necessary, re-apply 5 to 8 weeks after the spring spray.
Circular purple scale	40 ml PLUS 1 l narrow range distillation spray oil / 100 l water	When a single preventative spray is required, apply 9 to 11 weeks after petal fall. In the case of double spray preventative programs, precede this treatment with 100 ml per 100 litres water in the spring. WARNING Do not apply if shade temperature exceeds 30°C. Do not apply 35 days before or after Sulfur applications. IMPORTANT In all cases apply treatments as a full cover spray. In all cases keep treated trees under observation and be prepared to apply a full corrective spray, if scale infestation of fruit occurs in mid to late summer.
	60 ml PLUS 200 g Dimethoate WP / 100 l water	Corrective treatment: Apply when 25 to 40 % of fruit is infested with one or more nymphs or adults. Do not use on rough lemon, non-budded lemon stock and Seville oranges. Do not wait until fruit is heavily infested. WARNING Poor control can be expected if organophosphate resistance occurs.
African bollworm	75 ml / 100 l water	Apply as a full cover spray at blossoming or when the pest is noticed. Repeat if necessary.
Aphids	20 ml / 100 l water	Apply as a light cover spray. Repeat if necessary.
Mealy bug	100 ml / 100 l water OR 60 ml PLUS 500 ml narrow range distillation spray oil / 100 l water	Apply when first signs of the pest are noticed. Repeat application if necessary. Apply as a full cover spray and ensure thorough coverage.
Orange dog	40 ml / 100 l water	Apply as a light cover spray. Repeat if necessary.
Psylla	60 ml / 100 l water	Apply when eggs start to hatch on new growth. If possible apply on a spot spray basis. If swelling has already occurred on leaf surfaces, spraying will not correct abnormal growth.
Potatoes Black maize beetle and Cutworm	Pre-plant: 15 ml / 100 m row length in 3 l water	Programme application: Apply pre-plant in a 10 cm wide band, just before closing the furrow.
	Post-plant: 500 ml / ha	Apply 6 weeks later in not less than 500 litres water per hectare and increase the volume of water with the increase in crop density. Repeat at intervals of 2 to 3 weeks. Use drop arms and ensure good ground coverage. Rain or ridging after application, is essential for good control.
Cutworm	1 l / ha	Apply just prior to tuber initiation in not less than 500 litres water per hectare and increase the volume of water with the increase in crop density. Repeat every 2 to 3 weeks. Use drop arms and ensure good ground coverage. Rain or ridging is essential for good control.

Crop / Pest	Dosage Rate	Remarks
Maize Black maize beetle	10 ml / 100 m row length in 3 ℓ water	Ground application only: Row application: Apply in a 30 cm wide band behind the planter press-wheel and cover with a layer of soil, by dragging a piece of iron or a chain behind the planter.
	1 ℓ / ha in 200 ℓ water	Overall application: Apply as an overall spray, prior to planting and mix the soil to a depth of 10 cm, by using a suitable implement, e.g. a disc or fieldspan. NOTE These applications will suppress Cutworm. Less effective control can be expected under dry soil conditions. May be sprayed on to the soil surface without incorporation, if rain is expected within 24 hours of application or before irrigation.
Stalk borer	3.5 ml / 100 m row length in 3 ℓ water	Ground application only: Early planting: Apply when 5 % of the plants are infested with eggs or when 10 % of the plants show "shot hole" damage. If control of this infestation is delayed too long, the larvae may be protected inside the stalk and poor results can be expected. Late Planting: Apply the first spray 30 to 35 days after planting and repeat 14 days later.
Tobacco Cutworm and Wire worm	200 ml / 100 ℓ water	Apply 30 ml per plant as a stem treatment and ensure thorough wetting of the stem and soil surrounding the base of the plant. Do not apply over the heart of the plant, as this can cause leaf damage. Repeat if necessary.
Tomatoes African bollworm and Plusia Looper	150 to 200 ml / 100 ℓ water	Apply as a full cover spray and repeat every 7 days. When a heavy African bollworm infestation occurs, the higher dose is recommended. Repeat this application every 7 days, until pests are under control. Thereafter continue spraying the lower dosage rate (150 ml) every 7 days.
Thrips	150 to 200 ml / 100 ℓ water	Apply as a full cover spray and repeat every 7 days. The above spray programme for African bollworm and Plusia Looper will also control Thrips.
Wine Grapes Mealy bug and suppression of Argentine ants	75 ml / 100 ℓ water	Summer spray only: Apply when the first movement of Mealy bug is noticed. Apply as a high volume application, ensuring thorough coverage of the vines. Repeat after 21 days if necessary. Do not apply during bud swell or within 4 weeks after budding.
Mealy bug	100 ml / 100 ℓ water (for low infestation)	Dormant sprays only: Apply two applications at 2 week intervals, before budburst. Apply as high volume application, to ensure optimum coverage. NOTE Argentine ants, if present at the time of application, will be suppressed by all 3 dosage regimes. Cocktail ants will be controlled by the highest dosage rate and suppressed by the middle dosage rate.
	200 ml / 100 ℓ water (for high infestation)	

Crop / Pest	Dosage Rate	Remarks
Wine and Table Grapes Cocktail ants (corrective spray only)	400 ml / 100 ℓ water	(Refer to column above also). Dormant spray only: Apply as a single spray when Cocktail ants are present. Apply as a high volume application, to ensure optimal coverage. NOTE This application will also control Mealy bug and suppress Argentine ants if present at application.
Table Grapes Mealy bug	200 ml / 100 ℓ water (two applications)	Dormant spray only: Apply two sprays in the later winter dormant period. The first spray should commence approximately 6 weeks before budburst. The second spray should be applied a minimum of 7 days after the first spray, but before any signs of green growth are evident. (CHLORPYRIFOS 480 EC is phytotoxic to young vine leaves). Method of application: Use only handgun type-high volume sprays. Vines should be individually drenched down to ground level with minimum of 4 litres spray mixture per vine. Follow-up sprays: In certain vineyards high population pressure and poor application might necessitate a follow-up spray in summer. As soon as Mealy bug is observed, apply a suitable registered chemical. Where possible, apply spot treatment only.
Wheat Russian wheat aphid (<i>Diuraphis noxia</i>)	750 to 1000 ml / ha	Use the higher dosage rate for the first application and where high infestation occurs. Start spraying when the first signs of infestation are observed. Repeat sprays 8 to 10 days later if necessary, using the lower dosage rate of 750 ml per hectare. Apply 200 to 300 litres water per hectare, depending on size of plants. Ground application: Apply as an overall spray. Aerial application: Applying not less than 30 litres water per hectare. NOTE These applications will also suppress Black maize beetle.
Green and Brown aphids	750 ml / ha	Spray if the aphid population is on the increase, and very few Ladybird predators and parasites are present. Ground application: Apply in minimum of 300 litres water per hectare. Repeat after 10 to 14 days if necessary. Aerial application: Applying not less than 30 litres water per hectare.