

# Chlorpyrifos 480 EC

Reg. No.:L6272 Act /Wet No. 36 of/van 1947

An Emulsifiable Concentrate insecticide for the control of pests as listed in certain crops

'n Emulsifiseerbare konsentraat Insektedoder vir die beheer van plae soos gelys in sekere gewasse.

IRAC INSECTICIDE GROUP CODE:		IRAC INSEKDODER GROEP KODE:
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**ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL:**

Chlorpyrifos/Chlorpyrifos.....480 g/l  
 [Organophosphate/Organofosfaat]

**Registration holder / Registrasiehouer:**  
**Shaik Agchem CC trading as**  
**ARYSTA LifeScience South Africa (Pty) Ltd**  
 Co. Reg. No./Mpy. Reg. Nr.: 2000/004551/07  
 7 Sunbury Office Park,  
 off Douglas Saunders Drive,  
 La Lucia Ridge, South Africa, 4019  
 Tel: 031 514 5600

Contents/Inhoud  
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Batch No. / Lot Nr.:	
Date of manufacture: / Datum van vervaardiging:	

**U.N. No. 3017**



**READ THE LABEL IN DETAIL BEFORE OPENING THE CONTAINER. / LEES DIE ETIKET VOLLEDIG VOORDAT DIE HOUER OOPGEMAAK WORD.**  
**For full particulars, see enclosed leaflet. / Vir volledige besonderhede, sien ingeslote pamflet.**

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## WARNINGS:

- **Withholding periods:** Minimum time between last application and harvest or feeding.

Apples (summer application).....	40 days
Citrus.....	60 days
Carrots, 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, Brusselsprouts, Potatoes, Cauliflower and broccoli.....	7 days
Bananas, Grapes .....	28 days
Tomatoes .....	4 days

- Handle with care.
- Poisonous when absorbed through the skin, swallowed or inhaled.
- Toxic to fish, bees and wildlife.
- FLAMMABLE - Do not store near open flame.
- Store in a cool place.
- Store away from food and feed stuffs.
- Keep out of reach of children, uninformed persons and animals.

## 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 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 pest 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

Do not inhale the spray mist. Wash contaminated clothing after use. Wash with soap and water after use or accidental skin contact. Do not eat, drink or smoke whilst mixing or applying the product or before washing hands and face. Avoid drift of spray onto other crops, grazing, rivers, dams and areas not under treatment. Clean applicator before using it for other remedies. Dispose of wash water where it will not contaminate crops, grazing, rivers, dams etc. Prevent contamination of food, feeds, drinking water and eating utensils.

Invert the empty container over the spray or mixing tank and allow to drain 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 10% of that of the container. Add the rinsings to the contents of the spray tank before destroying the container in the prescribed manner. Destroy empty container by perforation and flattening and never use for any other purpose.

#### **SYMPTOMS OF HUMAN POISONING:**

If swallowed and aspirated into the lungs, chemical pneumonia can occur.

Headache, dizziness, anxiety, tremors of the tongue and eyelids, sweating, nausea, constricted pupils, vision impairment, abdominal cramps, diarrhoea, salivation, respiratory difficulty, cyanosis, convulsions, coma. May cause skin irritation, eye irritation and conjunctivitis. May be irritating to the respiratory tract and mucous membranes. Cholinesterase inhibition.

#### **FIRST AID TREATMENT:**

The airway should be kept clear to maintain respiration. First aid treatment should be performed by qualified medical personnel and should include, if necessary, mouth-to-nose respiration and cardiac massage.

**Inhalation:** Immediately remove source of contamination or move the patient to fresh air. Keep the patient warm and at rest. If necessary, perform mouth-to-nose respiration and administer oxygen. **Obtain medical advice immediately.**

**Skin contact:** Remove contaminated clothing, shoes and leather goods immediately. Wash skin gently and thoroughly with clean water and non-abrasive soap until no evidence of chemical remains. **Obtain medical advice immediately.**

**Eye contact:** Flush eyes immediately with large amounts of gently flowing cold water, occasionally lifting upper and lower lids, for at least 15 to 20 minutes until no evidence of chemical remains. Obtain medical advice.

**Ingestion:** Do not induce vomiting, due to aromatic solvent present in product. **Obtain medical advice immediately** and make the container, or label or Data Sheet available.

Never give anything by mouth to a semi-conscious or unconscious person. If vomiting occurs, take care to prevent vomit from being inhaled. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen.

#### **ADVICE TO PHYSICIAN:**

This product contains a cholinesterase inhibitor and an aromatic solvent.

If product is aspirated into the lungs during ingestion or vomiting, mild to severe chemical pneumonia may be caused. The stomach should be emptied as soon as possible by careful gastric lavage, using a cuffed endotracheal tube already in place.

An aqueous suspension of activated charcoal can be administered to absorb remaining toxicant. As early as possible, administer atropine sulfate intravenously and pralidoxime chloride or obidoxime chloride. The dose and frequency of atropine varies with each patient, administer until atropinization is achieved. Signs of atropinization are dry, flushed skin, tachycardia and pulse rate of over 120 per minute.

**Important Note:** Morphine, phenothiazines, reserpine and theophylline are contraindicated in organophosphorous poisoning. Avoid aminoglycosides and succinylcholine.

#### **RESISTANCE WARNING:**

For resistance management, **CHLORPYRIFOS 480 EC** is a group code **1B** insecticide. Any insect population may contain individuals naturally resistant to **CHLORPYRIFOS 480 EC** and other group code **1B** insecticides. 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.

**DIRECTION FOR USE:** Use only as indicated.

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

CROP and PEST	DOSAGE / 100 ℓ WATER OR AS INDICATED	REMARKS
<p><b>CITRUS</b> Red Scale (<i>Aonidiella aurantii</i>), Mussel scale</p> <p>Circular purple scale</p>	<p>100ml</p> <p>40 ml + 1 ℓ Narrow distillation range spray oil</p> <p>60 ml + 200 g dimethoate WP</p>	<p><b>PREVENTATIVE TREATMENT:</b> Usage in orchards where Red Scale is under commercial control. 1. Apply as a full cover spray at 80 - 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 - 8 weeks after the spring spray. When a single preventive spray is required, apply 9 - 11 weeks after petal fall. In the case of double spray preventive programmes, precede this treatment with 100 ml 100ℓ water in the spring.</p> <p><b>WARNING:</b> Do not apply if shade temperature exceeds 33 °C. Do not apply 35 days before or after Sulphur applications.</p> <p><b>IMPORTANT:</b> 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.</p> <p><b>CORRECTIVE TREATMENT:</b> Apply when 25 - 40% of fruit is infested with one or more nymphos or adults. <b>DO NOT</b> use on rough lemon, non-budded lemon stock and Seville oranges. <b>DO NOT WAIT</b> until fruit is heavily infested. <b>WARNING:</b> Poor control can be expected if organo-phosphate resistance has occurred.</p>
American bollworm	75 ml	Apply as a full cover spray at blossoming or when pest is noticed. Repeat if necessary.
Aphids	20 ml	Apply as a light cover spray. Repeat if necessary.
Mealy bug	100 ml/ of 60 ml + 500 ml Narrow distillation range spray oil	Apply when first signs of pests are noticed. Repeat application if necessary. Apply as a full cover spray and ensure thorough coverage.
Orange dog	40 ml	Apply as a light cover spray. Repeat if necessary.
Psylla	60 ml	Apply when eggs start to hatch on new growth. If possible apply on a spot spray basis. If swelling already occur on leaf surfaces, spraying will not correct abnormal growth.
<p><b>APPELS, PEARS, PEACHES, PLUMS, APRICOTS</b> Pernicious scale, Red scale</p>	75 ml	Apply only when the trees are dormant. At least two high volume sprays. Apply at 4 weeks intervals, one before and one after pruning.
<p><b>APPELS and PEARS</b> Mealy bug</p>	75 ml - 100 ml (1,7 - 2,5 l / ha)	<b>DORMANT APPLICATIONS ONLY:</b> Apply two high volume sprays. First spray with delayed foliation oil spray of 3 weeks before budswell / greentip. Second spray at budswell / greentip. Use higher dosage rate where heavy fruit infestation was experienced the previous season.

CROP and PEST	DOSAGE / 100 ℓ WATER OR AS INDICATED	REMARKS
<b>APPELS</b> Woolly aphid	75 ml	<p><b>Summer spray only: PRE-HARVEST WOOLLY APHID CONTROL.</b> 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. The <b>SHAIK CHLORPYRIFOS EC</b> spray should not replace the standard vamidothion Woolly aphid spray.</p> <p>Spray Golden Delicious apples only if absolutely necessary as ringmarking of fruit may occur under certain growing conditions. The <b>CHLORPYRIFOS EC</b> spray will suppress Pernicious scale and Mealy bug.</p> <p><b>POST HARVEST WOOLLY APHID CONTROL:</b> If necessary apply a <b>CHLORPYRIFOS</b> spray as soon as possible after harvest.</p>
<b>TOBACCO</b> Cutworm Wireworm	200 ml / ha	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.
<b>LAWNS</b> Crickets Lawn caterpillars	50 ml 40 ml	Apply 500 ml of the mixture per m <sup>2</sup> as a drench when pest is noticed. Repeat application weekly until the population is under control and thereafter as necessary.
<b>PASTURES</b> Army worm	250 ml / ha	Apply in 200 - 500 lt water / ha.
<b>CARROTS, POTATOES</b> Cutworms (Western Cape only)	1 ℓ/ha	Apply as an overall application when plants emerge. Repeat application at intervals of 2 - 3 weeks. Apply in at least 500 lt water / ha.
<b>LETTUCE</b> Cutworms (Western Cape only)	1 ℓ/ha	Apply as an overall application when plants emerge. Repeat application every 7 - 14 days when necessary. Apply in at least 500 lt water / ha.
<b>CRUCIFERAE</b> Aphids ( <i>Brevicoryne brassicae</i> ) and Caterpillars of the Diamond back moth and Greater cabbage moth	50 ml	Apply when pest is first noticed. Do not apply less than 500 lt water / ha. Ensure thorough coverage of the whole plant. When aphids or the caterpillars are already in the cabbage head, or in the clusters of leaves of the Brussels sprouts, variable control can be expected. The adding of a wetting agent is recommended.
<b>TOMATOES</b> American bollworm Plusia looper	150 - 200 ml	Apply as a full cover spray and repeat every 7 days. When a heavy American 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 - 200 ml	Apply as a full cover spray and repeat every 7 days. The above spray programme for American bollworm and Plusia looper will also control Thrips.
<b>POTATOES</b> Black maize beetle	<b>Pre-plant:</b> 15 ml/100 ml row length in 3 ℓ water	<b>PROGRAMME APPLICATION:</b> Apply in 10 cm band just before closing the furrows.
	<b>Post-plant:</b> 500 ml/ha	Apply 6 weeks later in not less than 500 ℓ water / ha and increase the volume of water with the increase in crop density. Repeat at intervals of 2 - 3 weeks. Use drop arms and ensure good ground coverage. Rain or ridging is essential for good control.
Cutworm	1 ℓ/ha	Apply just prior to tuber initiation in not less than 500 ℓ water / ha and increase the volume of water with the increase in crop density. Repeat at 2 - 3 weeks intervals. Use drop arms and ensure good ground coverage. Rain or ridging is essential for good control.

CROP and PEST	DOSAGE / 100 ℓ WATER OR AS INDICATED	REMARKS
<b>WINE GRAPES</b> Mealy bug, Argentine ants (suppression)  Mealy bug	75 ml  100 ml 200 ml	<b>SUMMER SPRAY ONLY:</b> 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.  <b>DORMANT SPRAYS ONLY:</b> For low infestation pressure. For high infestation pressure. Apply two applications at two week intervals before budburst. Apply as high volume applications to ensure optimum coverage. <b>NOTE:</b> Argentine ants, if present at the time of application, will be suppressed by all three dosage regimes.
<b>WINE AND TABLE GRAPES</b> Cocktail ants (clorective sprays only)	400 ml	Refer to paragraph above. <b>DORMANT SPRAY ONLY:</b> Apply as a single spray when Cocktail ants are present. Apply as a high volume application to ensure optimal coverage. <b>NOTE:</b> This application will also control Mealy bug and suppress Argentine ants if present at application.
<b>TABLE GRAPES</b> Mealy bug	200 ml (two applications)	<b>DORMANT SPRAY ONLY:</b> Apply 2 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. ( <b>Chlorpyrifos EC</b> ) is phytotoxic to young vine leaves). Use only hand gun type high volume sprays. Vines should be individually drenched down to ground level with minimum of 4 lt spray mixture / vine. <b>Follow-up sprays:</b> In certain vineyards high population pressure and poor application might necessitate follow-up sprays in summer. As soon as mealy bug is observed, apply a suitable registered chemical.
<b>WHEAT</b> Russian wheat aphid ( <i>Diuraphis noxia</i> )  Green and brown aphids	750ml - 1 ℓ/ha  750 ml / ha	Use higher dosage rate for the first application and where high infestation occurs. Start spraying when the first signs of infestation are observed. Repeat spray 8 - 10 days later if necessary. Apply in 200 - 300 lt water / ha depending on size of the plants. <b>Ground application:</b> Apply as an overall spray <b>Aerial spraying:</b> Apply in not less than 30 lt water / ha. <b>NOTE:</b> These applications will also suppress Black maize beetle. Spray if the aphid population is on the increase, and very few ladybird predators and parasites are present. Ground or aerial application.
<b>DRY BEANS, GRAIN SORGHUM</b> Black maize beetle	10 ml / 100 m row length in 3 ℓ water	Spray into the plant furrow just behind the planter shoe before closing the furrow.
<b>MAIZE</b>  Black maize beetle   Stalkborer	Row application: 10 ml / 100 m row length in 3 ℓ water Overall application: 1 ℓ/ha in 200 ℓ water  3,5 ml / 100 ml row length in 3 ℓ water	Apply in a 30 cm 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. Apply as an overall spray prior to planting and mixing the soil to a depth of 10 cm by using a suitable implement, eg. a disc or Fieldspan. <b>NB: These applications will suppress Cutworm. Less effective control can be expected under dry soil conditions. May be sprayed onto the soil surface without incorporation, if rain is expected within 24 hours of application or before irrigation.</b>  <b>GROUND APPLICATION ONLY:</b> <b>Early planting:</b> Apply when 5% of the plants are infested with eggs or when 10% 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. <b>Late planting:</b> Apply the first spray 30 - 35 days after planting and repeat 14 days later.
<b>BANANAS</b> Flat mite, Thrips	75 ml	Apply as a high volume spray and ensure good coverage of each bunch. Commence spraying at the end July and repeat every 4 weeks until February.

CROP and PEST	DOSAGE / 100 ℓ WATER OR AS INDICATED	REMARKS
<b>ORNAMENTALS</b> American bollworms and Aphids, Mealy bug and Australian bug, Pernicious Scale and Red Scale, Red spider mite  Ants	50 ml  100 ml  75 ml  100 ml  20 ml / 10 ℓ water	Apply as a full cover spray as soon as pest is noticed and repeat when necessary.  Apply as a full cover spray when pest is noticed and repeat when necessary.  Apply 2 sprays 4 weeks apart, thoroughly wetting the wood while plants are dormant.  Apply as a full cover spray ensuring under leaf coverage. Repeat as necessary every 14 days. <b>GARDENS:</b> Apply around nests and trails. Repeat if necessary. <b>BUILDINGS:</b> Apply as a coarse droplet spray or by means of a paint brush onto walls inside cupboards and places where ants occur.
<b>OUTDOOR, SEWAGE FARMS, ABATTOIRS, PIGSTIES, BARN AND STABLES</b> <b>Flies</b> <b>Mosquitoes</b>  <b>German and American cockroach</b> <b>Bedbugs</b>	100 ml / ℓ water  100 ml / 10 ℓ water  50 ml / 10 ℓ water	Apply as a coarse droplet spray or by means of a paint brush to poles, windowsills, walls and roofs.  Apply as a coarse droplet spray or by means of a paint brush onto skirting boards, underneath wash basins, water piping, behind refrigerator units, stoves and geysers, inside cupboards and all other places frequented by cockroaches. Apply as a coarse droplet spray or by means of a paint brush onto walls, woodwork, bedsteads and other possible hiding places, but only lightly to mattresses