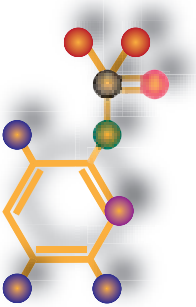
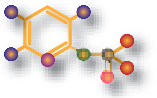


Pyrinex

An emulsifiable concentrate formulation containing 480g/l (43.7%w/w) chlorpyrifos. Also contains xylene

Pyrinex



INSECTICIDE

I

MAPP 13534

For the control of a wide range of insect pests in a range of crops

SAFETY PRECAUTIONS

Operator Protection

Chlorpyrifos is an anticholinesterase organophosphorus compound.

DO NOT USE if under medical advice NOT to work with such compounds.

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment.

WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

WEAR SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling trays or peat blocks/modules of seedlings.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WASH CONCENTRATE from skin or eyes immediately.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

DO NOT BREATHE SPRAY.

WASH HANDS AND EXPOSED SKIN before meals and after work.

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

Storage and Disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.

KEEP OUT OF REACH OF CHILDREN.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank and dispose of safely.

DO NOT RE-USE CONTAINER for any purpose.

SEE INSIDE BOOKLET FOR ENVIRONMENTAL PROTECTION

The COSHH (Control of Substances Hazardous to Health) Regulations may apply to the use of this product at work

MAKHTESHIM-AGAN (UK) LIMITED
Unit 16, Thatcham Business Village, Thatcham, Berkshire RG19 4LW
Tel: 01635 860555 **Technical Helpline:** 01635 876 622

PROTECT FROM FROST
Shake well before use

5 Litres e

The Voluntary Initiative
Promoting responsible pesticide use

LERAP A

MA

This label is compliant with the CPA Voluntary Initiative Guidance

97050658D/200910

This leaflet/booklet is part of the approved product label

IMPORTANT INFORMATION

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL INSECTICIDE

Crops	Maximum individual dose	Maximum number of treatments	Latest time of application
Wheat, barley	1.5 L product/ha	Two per crop	Before flag leaf sheath extending (Zadoks GS 39)
AND	1.0 L product/ha	One per crop	Until beginning of flowering (Zadoks GS 61)
OR	0.7 L product/ha	One per crop	14 days before harvest
Oats	1.5 L product/ha	Three per crop	Before second node detectable
Permanent grassland, rotational grassland	1.5 L product/ha	One per year	14 days before cutting or grazing
Managed Amenity Turf	1.5 L product/ha	Two per year	-
Sugar beet	1.5 L product/ha	One per crop	End of July in year of harvest
Forage maize	1.5 L product/ha	One per crop	21 days before harvest
Cabbage, Cauliflower, broccoli/calabrese, Chinese cabbage	2.0 L product/ha	Two per crop	21 days before harvest
Cabbage, Cauliflower, Brussels Sprouts, Broccoli/ calabrese	70ml spray solution per plant (see other specific restrictions 3a.)	One per crop	4 days after transplanting, or at seedling emergence
OR	5 litre spray solution per 30 metres of row (see other specific restrictions 3a.)	One per crop	4 days after transplanting or at seedling emergence
Cabbage, cauliflower, Brussels sprouts, broccoli/ calabrese	100 ml product/5000 blocks (see other specific restrictions 3b.)	One prior to planting out	4 leaf stage
Cabbage, cauliflower, Brussels sprouts, broccoli/ calabrese	50 ml product/5000 modules (see other specific restrictions 3c.)	One prior to planting out	4 leaf stage
Potato (seed)	2.0 L product/ha	Two per crop	21 days before harvest
Onion	2.0 L product/ha	One per crop	21 days before harvest
Plum	2.0 L product/ha	Three per year (see other specific restrictions 6.)	14 days before harvest
Pears	2.0 L product/ha	Two per year (see other specific restrictions 6.)	14 days before harvest

Apple	1.0 L product/ha	One per year (see other specific restrictions 6.)	Pre-blossom
OR	2.0 L product/ha	Three per year post blossom (see other specific restrictions 6.)	14 days before harvest
Strawberry	1.5 L product/ha	Two per crop (red spider mite use) (see other specific restrictions 6.)	7 days before harvest
	1.0 L product/ha	One per crop (aphids/ tortix use) (see other specific restrictions 6.)	7 days before harvest
OR	570mls spray solution/ plant (see other specific restrictions 3d.)	One (see other specific restrictions 5.)	7 days before harvest
Raspberry	1.5 L product/ha	Three per year (see other specific restrictions 4 & 6.)	7 days before harvest
Blackcurrant	1.5 L product/ha	Three per year (see other specific restrictions 6.)	14 days before harvest
Gooseberry	1.5 L product/ha	One per year (see other specific restrictions 6.)	14 days before harvest
Non-edible crops:			
Cut logs	500ml spray solution per m2 (see other specific restrictions 7.)	Two per year	-

Other specific restrictions:

1. The container must not be re-used for any purpose.
2. Livestock must be kept out of treated areas for at least 14 days following treatment.
3. For drench applications the following maximum concentrations must not be exceeded: a) Listed brassicae (field): 100ml product per 100 litres of water.
   b) Peat blocks containing cabbage, brussels sprout, cauliflower and calabrese: 100 ml of product per 25 litres of water.
   c) Modules containing cabbage, Brussels sprout, cauliflower and calabrese: 50 ml of product per 5 litres of water.
   d) Strawberries: 2.0 litres of product per 1000 litres of water.
4. For raspberries the maximum total dose is 3.0 litres product/ha.
5. When used as a drench on strawberries, this product must only be applied at the end of the cropping season but before the end of November.
6. Fruit crops must not be treated during flowering.
7. For spray application to cut logs the maximum concentration must not exceed 1.0 litre of product per 100 litres of water.
8. This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme for broadcast air-assisted sprayers only. Before each spraying operation from a broadcast air-assisted sprayer, either a LERAP must be carried out in accordance with PSD's published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for three years.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

PYRINEX 48EC (MAPP 13534)

An emulsifiable concentrate formulation containing 480g/l (43.7%w/w) chlorpyrifos. Also contains xylene

HARMFUL

HARMFUL BY INHALATION AND IF SWALLOWED

MAY CAUSE SENSITISATION BY SKIN CONTACT

HARMFUL MAY CAUSE LUNG DAMAGE IF SWALLOWED

IRRITATING TO SKIN

HARMFUL IN CONTACT WITH SKIN

RISK OF SERIOUS DAMAGE TO EYES

DANGEROUS FOR THE ENVIRONMENT

VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION

AVOID CONTACT WITH SKIN. DO NOT BREATHE VAPOUR/SPRAY

IF SWALLOWED, DO NOT INDUCE VOMITING: SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER OR LABEL

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE

THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY

USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION

AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/SAFETY DATA SHEET

TO AVOID RISKS TO MAN AND THE ENVIRONMENT, COMPLY WITH THE INSTRUCTIONS FOR USE

SAFETY PRECAUTIONS

Operator Protection

Chlorpyrifos is an anticholinesterase organophosphorus compound.

DO NOT USE if under medical advice NOT to work with such compounds.

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment.

WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

WEAR SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling trays or peat blocks/modules of seedlings.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WASH CONCENTRATE from skin or eyes immediately.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

DO NOT BREATHE SPRAY.

WASH HANDS AND EXPOSED SKIN before meals and after work.

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

Environmental Protection

KEEP LIVESTOCK out of treated areas for at least 14 days after treatment.

DANGEROUS TO BEES. Do not apply to crops in flower or to those in which bees are actively foraging.

Do not apply when flowering weeds are present.

EXTREMELY DANGEROUS TO FISH OR OTHER AQUATIC LIFE.

Do not contaminate surface waters or ditches with chemical or used container.

DO NOT ALLOW DIRECT SPRAY from broadcast air-assisted sprayers to fall within 18m of the top of the bank of a static or flowing waterbody unless a Local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 5m of the top of a ditch which is dry at the time of application. Aim spray away from water. DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5m of the top of the bank of a static of flowing waterbody, or within 1m of the top of a ditch which is dry at the time of application. DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1m of the top of the bank of a static or flowing waterbody.

Aim spray away from water.

THIS PRODUCT IS NOT ELIGIBLE FOR BUFFER ZONE REDUCTION UNDER THE LERAP HORIZONTAL BOOM SPRAYERS SCHEME.

This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme for BROADCAST AIR-ASSISTED SPRAYERS ONLY. Before each spraying operation from a broadcast air-assisted sprayer, either a LERAP must be carried out in accordance with PSD's published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for three years.

Storage and Disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.

KEEP OUT OF REACH OF CHILDREN.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank and dispose of safely.

DO NOT RE-USE CONTAINER for any purpose.

GUIDE TO DOCTOR

IF YOU FEEL UNWELL, seek medical advice (show label wherever possible).
IF SWALLOWED, DO NOT INDUCE VOMITING: SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER OR LABEL

Symptoms of Poisoning:

These may include excessive sweating, headache, weakness, faintness and giddiness, nausea, stomach pains, vomiting, small pupils, blurred vision, muscle twitching.

First Aid:

If any of the above symptoms occur, particularly if there is known contamination:

STOP WORK. Remove contaminated clothing. Wash exposed skin and hair.
Prevent all exertion. Call doctor AT ONCE and show him this label.

This product contains an anticholinesterase organophosphorus compound.

Specific Treatment

1. IN ALL CASES AND AS EARLY AS POSSIBLE inject Atropine sulphate 2mg. or pro rata for children and repeat (if necessary) until fully atropinised.
2. IF AVAILABLE administer Pralidoxime 1 gramme by intra-muscular injection. Repeat after 3-4 hours.

Other Measures

1. Keep airway clear.
2. Watch respiration - intubation with endotracheal tube, or tracheotomy may be necessary in conjunction with artificial ventilation.
3. Put patient at complete rest in hospital for 25 hours at least.

Confirmation of Diagnosis: By estimating cholinesterase activity (5ml blood, unhaemolysed, collected in an anticoagulant).
Further advice from: nearest National Poisons Information Centre.

DIRECTIONS FOR USE

IMPORTANT:

This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

1. RESTRICTIONS

The main restrictions are listed below. For other restrictions refer to 'CROP SPECIFIC INFORMATION' section.

1.1 Resistance management

Control of soil pests will be reduced in organic soils and when soil temperature remains below 5˚C.
Consult the processor before treating crops intended for processing.
Breakdown of Pyrinex 48EC inside glasshouses is very slow and can result in damage to susceptible crops planted several months later (e.g. lettuce, celery, chinese leaves, chrysanthemums etc) can result from even a single application of Pyrinex 48EC at the high concentrations used.

a. Strains of some aphid species are resistant to many aphicides. Where aphids resistant to products containing chlorpyrifos occur, Pyrinex 48EC is unlikely to give satisfactory control. Repeat treatments are likely to result in lower levels of control.

b. Pear suckers resistant to one or more groups of insecticides are widespread. Where strains resistant to products containing organophosphorus insecticides occur, Pyrinex 48EC is unlikely to give satisfactory control. Where repeat treatments are necessary, use different active ingredients.

c. Strains of 'spider mites' resistant to one or more groups of acaricides are widespread. Where strains resistant to products containing chlorpyrifos occur, Pyrinex 48EC is unlikely to give satisfactory control.

2. PEST CONTROL

Pyrinex 48EC is an organophosphorus insecticide which has a wide spectrum of activity against many pests. It acts by contact action having activity both biting insects such as caterpillars and sucking insects such as aphids. For further information on pest control refer to 'CROP SPECIFIC INFORMATION' below.

CROP SPECIFIC INFORMATION (Including Pest Control Information)

CROP	PEST	MAX. IND. DOSE L/HA	LATEST TIMING AND NOTES
ARABLE CROPS			
Wheat, barley, Oats**			
- up to 14 days before harvest	Frit fly	1.5	Apply on appearance of damage symptoms to the central shoot.
	Wheat blossom, Midge	1.0	Apply when first spikelets just visible (GS 51) until the beginning of flowering (GS 61)
	Wheat bulb Fly	1.5	Apply on appearance of damage or when pest warning given by ADAS or other specialist advisor that egg-hatch has occurred. Later applications to crops at the dead heart symptom stage will be less effective. Do not apply to snow covered soil. If egg hatch is prolonged a second application may be required, especially on organic soils.
	Leather-jackets	1.5	Application may be made when damage appears if high pest levels are found. **For oats the latest time of application is before second node detectable stage.
Sugar Beet End of July in year of harvest	Leather-jackets	1.5	End of July in year of harvest. Do not apply within four days of any herbicide. Apply when first damage is seen. This is usually when sugar beet follows grass. The sugar beet should be vigorous and the first leaves at least 12mm.
FORAGE CROPS			
Maize - up to 21 days before harvest	Frit fly	1.5	Apply at 100% crop emergence. If emergence is variable apply when half the crop has reached the 2 leaf stage.
Grassland (& managed amenity turf)	Frit fly	1.5	Frit fly will attack young plants at any time of the year. Apply at crop emergence or when damage is seen.
- up to 14 days before cutting or grazing	Leather jackets	1.5	Leatherjackets feed under ground. Young plants are vulnerable in the autumn and spring. Where high levels of leatherjackets are found or damage occurs treat in autumn or spring.

CROP	PEST	MAX. IND. DOSE L/HA	LATEST TIMING AND NOTES
VEGETABLE AND SALAD CROPS			
The number of foliar treatments permitted in brassicas is two per crop			
Seed crops of cabbage, cauliflower, broccoli/calabrese - up to 21 days before harvest.	Cabbage root fly	100 mls/100 litres water Apply approx 70 mls of dilute spray per plant or 5 litres spray solution per 30 metres of row.	Apply as a drench to the base of transplants within 4 days of planting out or direct to drilled plants at crop emergence if after the third week of April.
	Small species of caterpillars	1.5	Apply with an authorised wetter at 0.05% Apply after caterpillars have hatched when damage or caterpillars are seen.
Cabbage, cauliflower, Brussels sprout, broccoli/calabrese	Cabbage root fly	Peat block: 100ml product/ 25 litres water Modules: 50 ml product/ 5 litres of water	Apply ALONE as a peat block or module treatment. Immediately before treatment, moisten leaves with a light spray of water (e.g. 2 litres/5000 plants for modules). Ensure that the total water applied does not allow leaching from the blocks or modules. Peat blocks - apply 100 ml product per 5000 blocks (43 mm³) in the most dilute solution. The water volume should not exceed the water holding capacity of the peat block to avoid leaching, but should be at least 25 litres/5000 blocks. After treatment, wash the spray from the leaves with water. Modules - apply 50 ml product in 5 litres water per 5000 plants. This should treat modules of 11 to 13 ml capacity, but larger volumes can be applied to larger modules. After drenching, wash the plant leaves using 5 litre water/5000 modules. Do not exceed the concentrations: Peat block: 100 ml product/25 litres of water. Modules: 50 ml product/5 litres of water. Modules should be transplanted as soon as possible after treatment. If plants are to be dispatched freshly watered,Alpha Chlorpyrifos 48EC should be applied a few days before hand to ensure that it is not leached from the module during final watering. Pyrinex should not be used to treat blocks or modules planted out before the beginning of April. Transplanting of treated blocks and modules to a depth which brings untreated soil into contact with plant stems above the top of the block or module will lead to reduced control. DO NOT APPLY IN TANK MIX. Application in tank mix may cause severe scorch.

CROP	PEST	MAX. IND. DOSE L/HA	LATEST TIMING AND NOTES
Cabbage, cauliflower, Brussels sprout, broccoli/calabrese (continued)			Overdosing can result in transient yellowing of leaves, especially where high rates of a composting or wetting agent have been used. Breakdown of Pyrinex inside glasshouses is very slow and can result in damage to susceptible crops planted several months later (eg. lettuce, celery, Chinese leaves, chrysanthemums etc) can result from even a single application of Pyrinex at the high concentrations used.
Cabbage, Chinese Cabbage, Cauliflower, Broccoli/calabrese	Aphid	1.0	Apply with an authorised wetter at 0.05% when aphids first appear (this can also be used for the caterpillar and cutworm recommendations below) Results in summer under dry conditions will be reduced.
up to 21 days before harvest	Small species of caterpillar	1.5	Apply when damage is first seen, repeat where necessary.
	Cutworms	2.0 (28fl.oz/ac)	Spray when damage is first seen or when warnings are given by ADAS.
Brussels Sprouts,Cabbage, Calabrese, Cauliflower, broccoli	Cabbage root fly	100mls/100 litres	Apply as a drench of 70mls to the base of every plant as soon as growth commences after transplanting. The latest time of application is 4 days after transplanting.
	Complete control on Brussels sprout buttons is unlikely to be achieved.		
Onion, Seed Potatoes up to 21 days before harvest	Cutworms	2.0	Spray when damage is first seen or when warnings are given by ADAS. or other specialist advisor. For potatoes do not spray crops under severe drought stress as damage may occur. The variety Desiree is particularly susceptible. Only use on seed potatoes.
FRUIT CROPS			
Apple - up to 14 days before harvest	**Pre-blossom** Aphid, Blossom Weevil Sucker Capsid Tortrix Winter moth	1.0	Apply in sufficient water to give good cover and canopy penetration (250-2000l/ha). These pests will normally be controlled by an application at green cluster to pink bud. Capsid and aphid may need a second spray at petal fall.
	DO NOT APPLY BETWEEN PINK BUD AND PETAL FALL		
Apple	**Post-blossom** Aphid, Codling moth, Capsid, Winter moth, Woolly aphid, Red spider mite, Sawfly, Tortrix	2.0	Apply in sufficient water to give good cover and canopy penetration.(250-2000l/ha). Aphid and Sawfly will be controlled by a spray at or after petal fall. Winter moth, Codling moth and tortrix will be controlled by spray from mid -June onwards. Follow spray warnings. Red spider mite and woolly aphid will normally be controlled by the Codling/Tortrix sprays. Resistant organophosphorus strains of Red spider mite will not be controlled. Up to three applications can be made.

CROP	PEST	MAX. IND. DOSE L/HA	LATEST TIMING AND NOTES
FRUIT CROPS			
Pear - up to 14 days before harvest	**Pre-blossom** Aphid, Capsid Tortrix, Winter moth	1.0	Apply in sufficient water to give good Cover and canopy penetration (250-200 l/ha). These pests will normally be controlled by an application between bud burst and white bud.
	DO NOT APPLY DURING FLOWERING		
	Post-blossom Aphid, Capsid, Caterpillars, Codling moth, Pear sucker, Red spider mite	2.0 (28fl.oz/ac)	Apply in sufficient water to give good cover penetration (250-200 l/ha). For capsids, caterpillars and Pear sucker, apply when pest is first seen. Codling moth will be controlled by spray for mid June onwards. Aphid will normally be controlled when treating for codling. Resistant organophosophorus strains of red spider mite will not be controlled.
Plum - up to 14 days before harvest	**Pre-blossom** Aphid, Tortrix, Winter moth	1.0	Apply in sufficient water to give good cover and canopy penetration.(250-2000l/ha) Spray from bud burst to white bud stage.
	DO NOT APPLY BETWEEN WHITE BUD AND PETAL FALL		
	Post-blossom Aphid, Damson hop, Mealy plum aphid, Winter moth, Red spider mite	2.0	For control of Winter moth spray at cot split. Spray for aphids on appearance and repeat as necessary. Any of these sprays will normally control non-OP resistant red spider mite. Apply in 250-2000l/ha water. Only non-organophosphorus resistant strains of Damsonhop aphid will be controlled.
Blackcurrant - up to 14 days before harvest	Aphid, Caterpillars, Capsid	1.0	For aphids apply when attack occurs. Apply in sufficient water to give good leaf cover and canopy penetration (1000 l/ha). For capsid and caterpillars spray at early flower and three weeks later. Late aphid may require a third spray.
	Red Spider Mite	1.5	Apply in 2000 l/ha for control of red spider mite. OP resistant strains will not be controlled. Apply at fruit set and repeat as necessary. Treat bushes post-picking to clear up residual populations.
Raspberry - up to 7 days before harvest	Aphid, Raspberry beetle, Raspberry cane midge	1.0	Apply in 500-1000 litres water per hectare. Use a minimum 1000l/ha for raspberry beetle control. For cane midge spray on warning from ADAS or when small splits occur on outside of young cane. Repeat 10-14 days later but not if in flower. Spray at first pink fruit stage for control of raspberry beetle. For aphids, spray pre-blossom as required.
	Red Spider Mite	1.5	Spray into bottom of crop below the bottom wire.i.e. the bottom 60cm. Spray aphid and red spider mite on appearance. Only non OP resistant red spider mite will be controlled.

CROP	PEST	MAX. IND. DOSE L/HA	LATEST TIMING AND NOTES
FRUIT CROPS			
Strawberry - up to 7 days before harvest	Aphid, Tortrix	1.0	Apply in sufficient water to give good leaf cover and canopy penetration (1000 l/ha). Spray on appearance when pest appears before flowering. Do not spray again until the crop has been picked. Only make one application per crop against these pests.
	DO NOT APPLY BETWEEN WHITE BUD AND PETAL FALL		
	Red spider Mite,	1.5	Spray at the first sign of damage and at any time until the start of the flowering- two sprays may be necessary. Only non-organophosphorous resistant red spider mite will not be controlled. Two applications per crop are permitted to control red spider mite.
	Vine weevil	2.0 in 1000 litres	Apply 285-570ml solution per plant to the crown and surrounding soil after cropping and burning off. Always check plant susceptibility on a small number of plants first before treating large areas. Application to control vine weevil must not be made to strawberries grown under plastic tunnels or in cloches. Only one application per crop is permitted.
Gooseberries - up to 14 days before harvest	Aphid, Capsid, Caterpillars	1.0	For aphids apply when attack occurs. Apply in sufficient water to give good leaf cover and canopy penetration (1000l/ha). For capsid spray at first flower open and repeat three weeks later. For control of caterpillar spray as soon as the pests are seen, usually after fruit set. Late aphid may require a third spray. It is important to ensure spray penetration into the centre of large bushes.
	Red spider mite	1.5	Apply in 2000l/ha for control of red spidermite. OP resistant strains will not be controlled. Spray as soon as mites are seen on foliage and repeat if necessary.
NON EDIBLE CROPS			
Cut forest logs	Ambrosia beetle. Larch shoot beetle. Pine shoot beetle	1.0 per 100 litres	For single logs apply 500ml of solution per sq. metre of log surface area as a directed spray. If spraying stack apply 700ml solution per sq. metre. If spraying before infestation has occurred Pyrinex should be applied in water. If infestation has occurred apply in paraffin or diesel oil.

NUMBER OF APPLICATIONS

***** The maximum number of treatments per crop will vary according to the use. Where they have been applied and further control of the target pest is required, apply an appropriate insecticide that does not contain Chlorpyrifos.

3. MIXING AND APPLICATION

3.1 Mixing

Add half the required volume of water to the spray tank. Invert and shake thoroughly the contents of the bottle of Pyrinex 48EC. Then add the recommended quantity to the spray tank. Agitate while topping up and continue agitation during spraying. USE IMMEDIATELY. Do not leave sprayer standing with spray mix in it. Always ensure that the sprayer is clean, in good working order and calibrated accurately to the sprayer manufacturers recommendations. Thoroughly wash all spray and measuring equipment with water and a wetting agent immediately after use.

3.2 Volume

Apply in a minimum of 200 litres per hectare (20 gallons per acre) of water except for vegetables, fruit and non-edible crops where a minimum of 500 l/ha should be used. Low volume applications should not be used. If crop is dense a higher volume of water should be used.

3.3 Application

Make sure the sprayer is set to give an even application at the correct volume. It is essential that good leaf coverage is obtained, particularly in vegetables and fruit.

CONDITIONS OF SUPPLY

All goods supplied by us are of high grade and we believe them to be suitable, but as we cannot exercise control over their storage, handling, mixing or use, or the weather conditions before, during and after application which may affect the performance of the goods, all conditions and warranties, statutory or otherwise, as to the quality of fitness for any purpose of our goods are excluded, and no responsibility will be accepted by us or re-sellers for any failure in performance, damage or injury whatsoever arising from their storage, handling application or use. These conditions cannot be varied by our staff or agents whether or not they supervise or assist in the use of such goods.

MATERIAL SAFETY DATA SHEET
PYRINEX 48EC MAPP 13534

This Safety Data Sheet does not form part of the label approved under Control of Pesticides Regulation 1986

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product name	:	PYRINEX 48EC
Chemical formula	:	Chlorpyrifos: C9 H11 Cl3 NO3 PS
Chemical description	:	Chlorpyrifos: O,O-Diethyl O-3,5,6-trichloro-2-pyridyl phosphorothioate
Use	:	Insecticide
Company identification	:	Makhteshim Chemical Works Ltd. PO Box 60, Beer Sheva, 84100, Israel. Fax: +972-8-6296848
Emergency telephone number	:	+972-3-6106666 Subscription no. 36789 (Makhteshim)

2. COMPOSITION/INFORMATION ON INGREDIENTS

This product is considered to be hazardous and contains hazardous components.

Information on hazardous ingredients *

Substance name	Value(s)	CAS No.	EC Number	Index No.	Classification
Chlorpyrifos (ISO)	480 g/l	2921-88-2	220-864-4	015-084-00-4	T; R25, N; R50-53
Xylene	ca 45%	1330-20-7	215-535-7	601-022-00-9	R10, Xn; R20/21, Xi; R38
CaABS/n-Butanol	ca 4%	- -	- -	- -	R10, Xn; R22, R67, Xi; R37/38-41

3. HAZARDS IDENTIFICATION

Main hazards **THIS COMPOUND INHIBITS CHOLINESTERASE**

Physical/chemical hazards Flammable.

Human health hazards Harmful by inhalation and if swallowed. Irritating to eyes and skin. May cause sensitization by skin contact.

Environmental hazards Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST-AID MEASURES

Effects and symptoms Exposure may result in excessive sweating, weakness, salivation, nausea, bradycardia, tachycardia, bronchorrhea, cough, bronchospasm, lung oedema, small pupils, central nervous depression, fasciculation and convulsions, headache, faintness and giddiness.

Inhalation May result in systemic poisoning. **Inhalation** May result in systemic poisoning.

Ingestion May result in systemic poisoning. **Eye contact** Redness, tears.

First-aid measures

Inhalation Remove victim to fresh air. Keep victim warm and at rest. If not breathing give artificial respiration. If breathing difficult, give oxygen. Immediately get medical attention.

Ingestion Do not induce vomiting. Wash out mouth with plenty of water. Never give anything by mouth to an unconscious person. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediately get medical attention.

Skin contact Remove affected clothing and wash all exposed skin area with soap and water, followed by warm water rinse. Obtain medical attention.

Eye contact Wash off with plenty of water. Immediately consult an eye specialist.

Notes to a physician Antidote 1: Atropine sulfate. Antidote 2: Obidoxime chloride or Pralidoxime (PAM). Suggest serum and/or RBC cholinesterase determination. If ingested perform gastric lavage and administer activated charcoal.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable : For small fire: dry chemical, carbon dioxide. For large fire : water spray, alcohol resistant foam.

Special procedures : Fight fires from a protected location. Dike fire control water for later disposal. Keep containers cool by spraying with water.

Special exposure hazards : Thermal decomposition may generate: carbon monoxide, carbon dioxide, hydrogen chloride, sulfur oxide, nitrogen oxides, phosphorus oxides, chlorides, sulfides.

Protection against fire : Wear proper protective equipment. Self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Use appropriate protection (see section 8). During cleaning activity, shut off ignition sources.

Environmental precautions : Dispose of this material and its container at hazardous or special waste collection point, in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities. Contaminated soil layers have to be dug out.

Methods for cleaning up : In the event of minor spillage: Absorb in sand or other inert material. Use appropriate containment to avoid environmental contamination. In the event of major spillage: Collect and contain as much free liquid as possible. Dike spills using absorbent or impervious materials such as sand or clay for later disposal.

7. HANDLING AND STORAGE

Handling : Do not breathe fumes. Avoid contact with skin and eyes.

Storage : Keep locked up. Keep container tightly closed. Keep only in the original container in a cool, well-ventilated place. Keep container dry. Keep away from strong bases. Keep away from sources of ignition and heat - No smoking.

Packaging : Multi-layer high density polyethylene extrusion blow containers. Drums with polyethylene liner

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Industrial hygiene : Ventilation required. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower. Wash clothing before re-using. Wash hands thoroughly after handling.

Occupational Exposure Limits TLV-TWA [mg/m3] : (USA) Chlorpyrifos: 0.2, A4 skin (1999). (USA) Xylene: 434, A4 (1996).

Personal protective equipment

Respiratory system : During spraying wear suitable respiratory equipment.

Skin and body : Wear suitable protective clothing.

Hands : Wear suitable gloves.

Eyes : Chemical goggles or Safety glasses.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Liquid

Colour : Clear - amber

Odour : Characteristic

Specific gravity : 1.06-1.08

Molecular weight : Chlorpyrifos: 350.6

Melting point [˚C] : Chlorpyrifos: 41.5-43.5 (Pure)

Decomposition point [˚C] : Above 160˚C (Pure)

Vapour pressure : Chlorpyrifos: 2.4 x (10)-5 (25ºC (Pure).

Solubility in water : Emulsifiable

Flash point [˚C] : 32ºC (closed cup).

Explosion limits[%] : 1 (Xylene)

Explosion limits - upper [%] : 7 (Xylene)

10. STABILITY AND REACTIVITY

Physico-chemical Stability	:	Stable under normal conditions.
Hazardous decomposition products	:	Thermal decomposition may generate: carbon monoxide, carbon dioxide, hydrogen chloride, sulfur oxide, nitrogen oxides, phosphorus oxides, chlorides, sulfides.
Hazardous polymerization		Will not occur.
Conditions to avoid		Protect from (sun)light and excessive heat. Temperature exceeding 75°C.

11. TOXICOLOGICAL INFORMATION

Acute toxicity - Oral	:	LD50 (rat) 508
Acute toxicity - Dermal	:	LD50 (rabbit) > 2,000 mg/kg
Acute toxicity - Inhalation	:	LC50 (rat) > 3.3
Dermal irritation (rabbit)	:	Irritating to skin
Eye irritation	:	Irritating to eyes
Sensitization	:	Guinea pig maximization test: sensitizer
Carcinogenicity	:	Chlorpyrifos: Not carcinogenic
Reproduction toxicity	:	Chlorpyrifos: Not teratogenic in animal experiments
Mutagenicity	:	Chlorpyrifos: Not mutagenic

12. ECOLOGICAL INFORMATION

Ecological effects information	:	No ecological information is known on the product. The data below are for Chlorpyrifos
96 H-LC50 - Rainbow:	:	7.1
48 H-LC50 - Daphnia magna [µ/l)	:	0.1(MCW), 1.7(Pesticide Manual)
NOEC - Algae [mg/l]	:	>0.4 (Selenastrum capricornutum) (Pesticide manual)
LD50 - Birds [mg/kg]	:	476
Bees LD50 -[µG/Bee]	:	Toxic to bees
Persistence/degradability	:	Half-life time ($t_{1/2}$) = 80-279 days, (soil)
Mobility	:	Not Mobile
Bioaccumulative potential	:	Chlorpyrifos does not bioaccumulate in aquatic organisms. Biodegraded by microorganisms.

13. DISPOSAL CONSIDERATIONS

Methods of disposal	:	Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.

14. TRANSPORT INFORMATION

International transport regulations

UN number	:	1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S., (45% Xylene)
Packing group	:	II
Class	:	3
H.I.nr	:	30
IMDG-Marine pollution	:	Yes

15. REGULATORY INFORMATION

Classification : This product is provisionally labelled by the supplier in accordance to EU regulations.

Hazard symbol(s) : Xn, N

HARMFUL

DANGEROUS FOR THE ENVIRONMENT

Risk phrases : R10: Flammable.
R20/22: Harmful by inhalation and if swallowed.
R36/38: Irritating to eyes and skin.
R43: May cause sensitization by skin contact.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S02: Keep out of the reach of children.
S13: Keep away from food, drink and animal feedingstuffs.
S20/21: When using, do not eat, drink or smoke.
S23: Do not breathe gas/fumes/vapour/spray.
S24/25: Avoid contact with skin and eyes.
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
S61: Avoid release to the environment. Refer to special instructions/Safety data sheets.

16. OTHER INFORMATION

Recommended uses and restrictions None. Flammable.

Text of R-phrases in heading 2 R10: Flammable
R20/21: Harmful by inhalation and in contact with skin
R22: Harmful if swallowed
R25: Toxic if swallowed
R37/38: Irritating to respiratory system and skin
R38: Irritating to skin
R41: Risk of serious damage to eyes
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R67: Vapours may cause drowsiness and dizziness

Print Date 29/01/2007

The information contained in the Safety Data sheet is correct to the best of our knowledge at the date of issue. It is intended as a guide for the safe use, handling, disposal, storage and transportation and is not intended as a warranty or as a specification. The information relates only to the product specified and may not be suitable for combinations with other materials or in processes other than those specifically described herein.