ALTACOR®

Registration Number/Registrasie Nommer L8467, Act No. 36 of 1947/Wet 36 van 1947

READ THE LABEL BEFORE USE
KEEP OUT OF REACH OF CHILDREN AND ANIMALS

GROUP/GROEP	28	INSECTICIDES	INSEKDODERS

A water dispersible granule stomach and contact insecticide for the control of several pests on crops as listed.	**'n Water dispergeerbare korrel maag en kontak insekdoder vir die beheer van verskeie peste op gewasse soos gelys.**

HAZARD STATEMENTS:
Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:
Avoid release to the environment
Collect spillage
Dispose of contents/container to an approved waste disposal plant

WARNING

Active ingredient	**Aktiewe bestanddeel**
Chlorantraniliprole (anthranilic diamide) – 350 g/kg	chlorantraniliprool (antraniliese diamied) – 350 g/kg

Net Mass	**500g**	**Netto Massa**

REGISTRATION HOLDER/REGISTRASIEHOUER
FMC Chemicals (Pty) Ltd
Company Registration Number: 1988/001451/07
West End Office Park
Building C, Cnr West Ave & Hall Street
Centurion, 0014
www.ag.fmc.com/za/en

Batch Number	**Printed on Container**	**Lot Nommer**
Date of Manufacture	**Printed on Container**	**Datum van Vervaardiging**
Expiry Date	**2 Years from date of manufacture**	**Vervaldatum**

UN Number/VN Nommer **3077**

For any emergency or poisoning contact: Griffon Poison Information Centre (24 hrs) **Vir enige noodgeval of vergiftiging kontak Griffon vergiftiging Inligtingsentrum (24 hr)**	**+27-(0)-82-446-8946**

WARNINGS:

HAZARD STATEMENTS:
Very toxic to aquatic life with long lasting effects.

WITHHOLDING PERIODS: The following minimum number of days (withholding periods) between last application and harvest must be adhered to:

Apples …… …….. ……	14 days
Grapes (table) …… ……	3 days
Pears ……	14 days
Peaches and Nectarines ……..	14 days
Plums ……	14 days

- Handle with care.
- This product is not likely to be hazardous by inhalation or skin contact.
- This product is toxic to aquatic invertebrates.
- Keep out of the reach of children, uninformed persons and animals.
- Store in the closed labelled original container at temperatures not exceeding 25^{o}C away from food and feed.
- Use of this material in a manner or at a time other than in accordance with the directions may cause excessive residues or other undesirable results.
- ***RE-ENTRY:*** Do not enter treated area until spray deposit has dried.

MAXIMUM RESIDUE LEVELS – IMPORTANT NOTE:

The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Before applying ALTACOR® consult your local FMC representative, as well as the latest Deciduous Fruit Producers' Trust (DFTP) lists with MRL information and recommended PHI as published on the DFTP web site for updated detail on produce intended for export.

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 pest 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 immediately in the event of any uncertainty.

PRECAUTIONS:

PRECAUTIONARY STATEMENTS:

- Avoid release to the environment
- Collect spillage
- Dispose of contents/container to an approved waste disposal plant

- Do not inhale spray mist.
- Do not enter treated areas until the sprayed solution has dried.
- Persons in contact with the insecticide should wear protective clothing, (long-sleeved shirts and long pants, shoes with socks and gloves).
- Wash yourself after application of the product.
- Wash contaminated clothing after working with the product.
- In case of eye contact wash immediately with plenty of water.
- In case of ingestion call a physician or poison centre.
- Do not eat, drink or smoke whilst applying or mixing, or before washing hands and face.
- Prevent contamination of feed, food, eating utensils and drinking water.
- **DO NOT APPLY DIRECTLY TO AND PREVENT DRIFT ONTO OTHER EDIBLE CROPS THAN INDICATED ON THE LABEL, GRAZING, RIVERS, DAMS AND AREAS NOT UNDER TREATMENT.**
- Clean applicator after use and dispose of wash water where it will not contaminate crops, grazing, food or water.
- **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.
- This product is toxic to silkworms. Do not allow product to drift to silkworms production areas or mulberry orchards. To avoid harm, caution must be used in areas where desirable non-target species may be present.

FIRST AID MEASURES:

General advice

Never give anything by mouth to an unconscious person.

Inhalation

No hazards which require special first aid measures.
Consult a physician after significant exposure.

Skin contact

No hazards which require special first aid measures.
If on skin, rinse well with water.
Wash contaminated clothing before re-use.

Eye contact

Hold eye open and rinse slowly and gently with water for 15-20 minutes.
If eye irritation persists, consult a specialist.

Ingestion

No hazards which require special first aid measures.
Consult a physician if necessary.

RESISTANCE STATEMENT

When insecticides with the same mode of action are used repeatedly over several years in the same field, naturally occurring less sensitive individuals may survive, propagate and become dominant in that field. An insect is considered resistant to an insecticide if it survives a correctly applied treatment at the recommended dose and timing under normal weather conditions and a validation test with a suitable bioassay confirms the lack of activity. When resistance occurs, recommended rates fail to suppress the pest population below economic thresholds. Development of resistance can be avoided or delayed by alternating products having different modes of action. For additional information on insect resistance monitoring, visit the Insecticide Resistance Action Committee (IRAC) on the web at (http://www.irac-online.org).

ALTACOR® is an IRAC Group 28 Insecticide (ryanodine receptor modulator - diamide).

Repeated and exclusive use of **ALTACOR®** may lead to the build-up of resistant strains of insects in some crops. Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, this product may be used as part of resistant management strategies established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of mode-of-action classes of insecticides on succeeding generations and targeting the most susceptible life stage. Consult your local or area agricultural authorities for details, and follow the recommended IRAC guidance for use of ryanodine receptor modulator – diamide insecticides (http://www.irac-online.org).

Best practices for resistance management of Group 28 insecticides include:

• Avoid using the same mode of action (same IRAC group number) on consecutive generations of insect pests.

• Apply **ALTACOR®** and other Group 28 insecticides within a single “treatment window” to minimize exposing multiple successive generations of a pest species to the same mode of action insecticides. Make no more than 2 applications of **ALTACOR®** or other Group 28 products per “treatment window” on a crop.

• A “treatment window” is defined as the period of insecticidal activity provided by one or more applications of products with the same mode of action. A “treatment window”, including residual control, should not exceed 30 days (the length of a typical pest generation).

• Following a Group 28 “treatment window”, rotate to a “treatment window” of effective insecticides with a different mode of action (Group Number).

• Avoid using less than the labelled rates of **ALTACOR®** when applied alone or in tank mixtures.

• Target the most susceptible insect life stages, whenever possible.

• Monitor insect populations for product effectiveness. If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control.

• If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternate method of control for your area.

For additional information on insect resistance monitoring, visit the Insecticide Resistance Action Committee (IRAC) website (http://www.irac-online.org).

GENERAL INFORMATION:

ALTACOR® has a novel mode of action and acts by binding to and activating insect ryanodine receptors. This activation stimulates release and depletion of calcium from the internal stores of muscles, resulting in impaired muscle regulation, paralysis and ultimately insect death. Death of the pest occurs within 2-3 days, but inhibition of insect movement and feeding occurs rapidly.

ALTACOR® is active as a larvicide through ingestion (stomach action) and through cuticular absorption (contact action).

ALTACOR® controls mainly Lepidopteran insect pests, but also some insect pests in other Orders e.g. Coleoptera, Diptera etc. Applications of ALTACOR® have been shown to leave substantial populations of many beneficial insects (predators, parasitoids and pollinators) as well as predatory mites and can therefore be used effectively in Integrated Pest Management (IPM) programmes.

BEES AND BENEFICIAL ARTHROPODS:

Do not spray when pollinators are active. **ALTACOR®** helps conserve a large number of beneficial arthropods (parasitoids and predators). While these beneficial arthropods cannot be relied upon to control pests, they are of potential value and can be monitored along with pests in pest management programs on these crops.

RAINFASTNESS:

Once the spray mixture has dried on foliage and fruit (which can take up to 2 hours after application) on the target area, **ALTACOR®** will not be washed off by rainfall or sprinkler irrigation and the normal residual activity of the product should not be affected. Nevertheless repeated abnormal rainfall / overhead irrigation subsequent to application may reduce product effectiveness.

SPRAY DRIFT MANAGEMENT:

Special care must be taken to avoid spray drifts outside the target area, or onto ponds, waterways or ditches. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavourable environmental conditions. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that a drift is not occurring.

DIRECTIONS FOR USE: **USE ONLY AS DIRECTED**

COMPATIBILITY:

The compatibility of **ALTACOR®** has not been fully investigated. **ALTACOR®** is compatible with **Dithane® M-45 800 WP** (Reg. No. L2914 Act No. 36 of 1947) and **Dithane® 750 WG Neotec** (Reg. No. L4213 Act No. 36 of 1947).

For more compatibility information, or in the event of uncertainty, contact your nearest FMC representative.

It is recommended that users premix a small quantity of a desired tank mixture containing **ALTACOR®** and observe for possible adverse changes (settling out, flocculation, etc.). Avoid tank mixtures of several products.

TANK MIXING:

Spray equipment must be clean and free of previous pesticide deposits before applying **ALTACOR®**. Fill spray tank ¼ to ½ full of clean water. Pre-mix **ALTACOR®** with some clean water before adding to spray tank. Mix thoroughly so as to fully disperse the **ALTACOR®**. Once dispersed, continuous agitation by mechanical or hydraulic means is required.

TANK MIXING SEQUENCE:

Add different formulation types in the sequence indicated below*. Allow time for complete mixing and dispersion after addition of each product.

1. Water soluble bag.
2. **ALTACOR®** and other water dispersible granules.
3. Wettable powders.
4. Water based suspension concentrates.
5. Water-soluble concentrates.
6. Oil based suspension concentrates.
7. Emulsifiable concentrates.
8. Adjuvants, surfactants, oils.
9. Soluble fertilizers.
10. Drift retardants.

* *Unless otherwise specified by manufacturer directions for use or by local experience.*

Allow enough time for complete mixing and dispersion after addition of each product before the next product is added. Also refer to **COMPATIBILITY** statement above.

APPLICATION:

Apply **ALTACOR®** as a full cover application with conventional orchard spray equipment which is correctly calibrated to provide thorough coverage of the target crop and correct dosage rate per hectare.

The dosage of **ALTACOR®** per hectare should be calculated according to the tree-row-volume (TRV) of the orchard, irrespective of the actual volume of water applied. The TRV is the water volume required when the trees are in full leaf and is calculated according to the formula:

$$TRV = \frac{\text{Tree Height* (m) x Tree Diameter * (m) x 937}}{\text{Row width (m)}}$$

*(Tree height and tree diameter should be measured during summer when trees are in full flush)

ALTACOR® can be applied as either a high volume application (water volume/ha equal to TRV) or concentrated, low volume application, where the actual water volume is lower than TRV. In either case, the amount of **ALTACOR®** per hectare remains constant (according to TRV). Do not apply **ALTACOR®** in a water volume of less than ¼ of TRV (i.e. not higher than 4x concentration).

Application (water) volumes recommended at different growth stages of the tree.

POME FRUIT

Growth Stage	% of TRV requirement/ha
From green tip to ± 30 % blossom	60 %
From ± full blossom to ± mid November	80 %
From ± beginning of December	100 %

PLUMS, PEACHES AND NECTARINES

Growth Stage	% of TRV requirement/ha
Bud Break to Full Bloom	60 %
75% Petal Drop to 1 month later (Mid Season)	80 %
Mid Season to Post Harvest	100 %

CROP/PEST	APPLICATION RATE	RECOMMENDATIONS/REMARKS
APPLES & PEARS: African bollworm (larvae) *Helicoverpa armigera*	10 g/100 ℓ spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** when eggs or young larvae are present, but before larvae enter the fruit. Apply **ALTACOR®** in 800 up to 3000 litres spray mixture per hectare. A follow-up **ALTACOR®** application may be necessary 10-14 days later depending on re-infestation of the pest. Thorough coverage of the foliage and developing fruit is essential. Do not exceed 3 **ALTACOR®** applications per season, including applications made with this product against Codling moth (refer to recommendations above). **Allow 14 days between last ALTACOR® application and harvest.** **IMPORTANT NOTE: The withholding period, i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's) but may not necessarily meet all those for export crops. Also refer to MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE under "WARNINGS"**

CROP/PEST	APPLICATION RATE	RECOMMENDATIONS/REMARKS
APPLES & PEARS: (continue) Codling moth (larvae) *Cydia pomonella*	10 g/100 ℓ spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** as a full cover application at spray volumes from 800 up to 3000 litres spray mixture per hectare depending on the size of the trees and stage of the crop. Ensure thorough coverage of the foliage and developing fruit. **ALTACOR®** can be applied against the first, second or third generation of the pest. In order to prevent the development of resistance, apply products with a different mode of action against different generations of codling moth, e.g. **STEWARD®** in the first generation, especially when banded fruit weevil (snout beetle) is also present. Refer to **STEWARD®** label for full details. If **ALTACOR®** is applied against the first codling moth generation, application must commence no later than 75% petal drop. Always apply **ALTACOR®** in a spray programme, not exceeding 14 day intervals between applications. Do not exceed 3 **ALTACOR®** applications per season in total, including applications made with this product against African bollworm (refer below). **Allow 14 days between last ALTACOR® application and harvest.** **<u>IMPORTANT NOTE</u>: The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Also refer to MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE under "WARNINGS"**
GRAPES (Table): False Codling Moth (larvae) *Thaumatotibia leucotreta* African Bollworm *Helicoverpa armigera*	10 g /100L spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** as a full cover foliar application at spray volumes from 1000 up to 1500 litres spray mixture per hectare depending on the size of the vines. The addition of a registered non-ionic wetter, such as **TREND® 90**, may enhance the insect control potential of **ALTACOR®.** Ensure thorough coverage of the foliage and developing fruit. **FALSE CODLING MOTH:** Apply **ALTACOR®** when moth catches in pheromone traps indicate an infestation of False Codling moth which is typically at the onset of ripening. Further applications should be made at 14 day intervals if necessary. **AFRICAN BOLLWORM:** Apply **ALTACOR®** when eggs or young larvae are present, but before larvae enter the fruit. A follow-up **ALTACOR®** application may be necessary 10-14 days later depending on re-

CROP/PEST	APPLICATION RATE	RECOMMENDATIONS/REMARKS
		infestation of the pest. Do not exceed 2 **ALTACOR®** applications in total per season on the crop. Should any further control of the pest be required apply an insecticide that is not from chemical group code 28. **Allow 3 days between last ALTACOR® application and harvest.** **<u>IMPORTANT NOTE</u>: The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Also refer to MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE under "WARNINGS"**
PEACHES AND NECTARINES: African bollworm (larvae) *Helicoverpa armigera*	10 g/100 ℓ spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** when eggs or young larvae are present, but before larvae cause fruit damage. Apply **ALTACOR®** in 500 up to 2000 litres spray mixture per hectare. A follow-up **ALTACOR®** application may be necessary 10-14 days later depending on re-infestation of the pest. Thorough coverage of the foliage and developing fruit is essential. Do not exceed 2 **ALTACOR®** applications in total per season on the crop including applications made against False Codling moth or Oriental Fruit moth. Should any further control of the pest be required apply an insecticide that is not from chemical group code 28. **Allow 14 days between last ALTACOR® application and harvest.** **<u>IMPORTANT NOTE</u>: The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Also refer to MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE under "WARNINGS"**

PEACHES AND NECTARINES: (continue) False Codling moth (larvae) *Thaumatotibia leucotreta*	10 g/100 ℓ spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** as a full cover foliar application at spray volumes from 500 up to 2000 litres spray mixture per hectare depending on the stage of the crop. The addition of a registered non-ionic wetter, such as **TREND® 90**, may enhance the insect control potential of **ALTACOR®.** Ensure thorough coverage of the foliage and developing fruit. Apply **ALTACOR®** when moth catches in pheromone traps indicate an infestation of False Codling moth which is typically at the onset of ripening. Further applications should be made at 14 day intervals if necessary. Do not exceed 2 **ALTACOR®** applications in total per season on the crop, including applications made against Oriental Fruit Moth and African bollworm. Should any further control of the pest be required apply an insecticide that is not from chemical group code 28. **Allow 14 days between last ALTACOR® application and harvest.** **<u>IMPORTANT NOTE</u>: The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Also refer to MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE under "WARNINGS"**

CROP/PEST	APPLICATION RATE	RECOMMENDATIONS/REMARKS
PEACHES AND NECTARINES: (continue) Oriental Fruit moth (OFM) (larvae) *Grapholita molesta*	10 – 12 g/100 ℓ spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** as a full cover foliar spray at 500-2000 liter spray mixture per hectare. Monitor pheromone trap catches and apply according to the day-degree model. Establish the first biofix date and apply first application when about 500º day degrees have accumulated. Apply second application when 420-510º day degrees have accumulated after the second biofix date. Applications must be carefully timed and applied before newly hatched larvae tunnel into shoots or fruit. **Use the higher rate under conditions of high OFM pressure.** Good coverage is essential. The addition of a registered non-ionic wetter, such as **TREND® 90**, may enhance the insect control potential of **ALTACOR®.** Do not exceed 2 **ALTACOR®** applications in total per season on the crop including applications made against False Codling moth or African bollworm. Should any further control of the pest be required apply an insecticide that is not from chemical group code 28. **Allow 14 days between last ALTACOR® application and harvest.** **<u>IMPORTANT NOTE</u>: The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Also refer to MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE under "WARNINGS"**

CROP/PEST	APPLICATION RATE	RECOMMENDATIONS/REMARKS
PLUMS: African bollworm (larvae) *Helicoverpa armigera*	10 g/100 ℓ spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** when eggs or young larvae are present, but before larvae cause fruit damage. Apply **ALTACOR®** in 500 up to 2000 litres spray mixture per hectare depending on the size of the trees and the stage of the crop. A follow-up **ALTACOR®** application may be necessary 10-14 days later depending on re-infestation of the pest. Thorough coverage of the foliage and developing fruit is essential. Do not exceed 2 **ALTACOR®** applications in total per season on the crop including **ALTACOR®** applications made against False Codling moth. Should any further control of the pest be required apply a pesticide that is not from chemical group code 28. **Allow 14 days between last ALTACOR® application and harvest.** **<u>IMPORTANT NOTE</u>: The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Also refer to MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE under "WARNINGS"**
PLUMS: (continue) False Codling moth (larvae) *Thaumatotibia leucotreta*	10 g/100 ℓ spray mixture (maximum 300 g/ha)	Apply **ALTACOR®** as a full cover foliar application at spray volumes from 500 up to 2000 litres spray mixture per hectare depending on the size of the trees and stage of the crop. The addition of a registered non-ionic wetter, such as **TREND® 90**, may enhance the insect control potential of **ALTACOR®.** Ensure thorough coverage of the foliage and developing fruit. Apply **ALTACOR®** when moth catches in pheromone traps indicate an infestation of False Codling moth which is typically at the onset of ripening. Further applications should be made at 14 day intervals if necessary. Do not exceed 2 **ALTACOR®** applications in total per season on the crop, including applications made against African bollworm. Should any further control of the pest be required apply an insecticide that is not from chemical group code 28. **Allow 14 days between last ALTACOR® application and harvest.**

		<u>IMPORTANT NOTE</u>: The withholding period or pre-harvest interval (PHI), i.e. number of days between last application and harvest, meets local maximum residue limits (MRL's), but may not necessarily meet all those for export crops. Also refer to MAXIMUM RESIDUE LEVELS - IMPORTANT NOTE under "WARNINGS"

<u>ACKNOWLEDGEMENT OF REGISTERED PRODUCTS:</u>

- Dithane® M-45 800 WP and Dithane® 750 WG Neotec is the registered products of Dow Agrosciences (Pty) Ltd.
- Altacor®, Trend® 90, Steward® 150 EC and Steward® is the registered products of FMC Chemicals (Pty) Ltd.