

Spinosad 480 SC

South Africa Reg. No: L 11655 Act/Wet No. 36 of/van 1947

A suspension concentrate contact and stomach insecticide for the control of insects on agricultural crops as listed.

ACTIVE INGREDIENT

Spinosad (naturallyte) 480 g/l

IRAC INSECTICIDE GROUP CODE

5A



WARNING

HAZARD STATEMENTS:

- Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.

Registration holder: Green Island Investments (Pty) Ltd.

Co. Reg. No.: 2013/043963/07

P.O. Box 1822, Heidelberg 1438, South Africa

Tel: 078 737 9236

24 HR EMERGENCY NUMBERS

Griffon Poison Information Centre: +27 82 446 8946

24 Hr Transport / Spill emergency no:

(Hazcall24) +27 86 044 4411 (Typhoon Plant Protection)

Distributed by: Typhoon Plant Protection (Pty) Ltd.

Co. Reg. No.: 1998/006156/07, C/O Farm Vlakfontein

Corner of the R23 Benoni Road & R550 Nigel Road

Brakpan District, Heidelberg 1438, Gauteng, South Africa

Tel: 078 737 9236

Contents:

1ℓ

Expiry Date:

Batch No:

Date of Manufacture:

U.N. No. 3082



READ LABEL IN DETAIL BEFORE OPENING THE CONTAINER. FOR FULL PARTICULARS, SEE ENCLOSED LEAFLET.
KEEP OUT OF REACH OF CHILDREN AND ANIMALS.



WARNINGS:**Withholding periods:**

Minimum number of days between the last application and harvest or grazing:	
Apples	30 days
Potatoes	7 days
Table Grapes	28 days
Citrus	14 days

Compliance with these withholding periods and application methods will ensure that residues **do not** exceed local maximum residue limits (MRL), but the import tolerances of other countries might possibly be exceeded. If the crop to be treated is intended for export, consult the relevant importer or exporting body regarding the use of this product, MRL and recommended withholding periods. Although **SPINOSAD 480 SC** is regarded as crop-safe on most of the important cultivars, this does not mean that a more sensitive cultivar might be available in future. **SPINOSAD 480 SC** must be tested on new cultivars prior to usage over large areas.

WARNINGS:**HAZARD STATEMENTS:**

- Very toxic to aquatic life with long lasting effects.
- Handle with care.
- **Do not** spray over or allow drift to contaminate water bodies such as dams, ponds, rivers, streams or fish hatcheries.
- Store in a cool, dry place away from food and feedstuffs.
- Keep out of reach of children, uninformed persons and animals.
- **Re-entry: Do not** enter treated area until spray deposit has settled down / dried unless wearing protective clothing.

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. The action and effect thereof may be effected by factors such as abnormal soil, climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label, 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 in the event of any uncertainty.

PRECAUTIONS:

PRECAUTIONARY STATEMENTS:

- Obtain special instructions before use.
 - **Do not** handle until all safety precautions have been read and understood.
 - Wash hands thoroughly after handling.
 - **Do not** eat, drink or smoke when using this product.
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- Wash with soap and water after use or 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.
 - 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 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.
 - Store in original labelled container only.
 - Destroy the container by perforation and flattening and dispose of it in a safe way.
 - **Do not** re-use the empty container for any other purpose.
 - Prevent contamination of food, feeds, drinking water and eating utensils.

Related ingredients:

Substance/Mixture: Mixture Ingredients:

Substance name (IUPAC)	CAS - No.	Concentration % By weight
Spinosad	168316-95-8	48.5%
Dispersant	62601-60-9	20%

FIRST AID TREATMENT:

- Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure.
- **Skin:** Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with non-abrasive soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). Seek medical advice if necessary.
- **Eyes:** Flush eyes with large amounts of gently flowing cold water or normal saline solution, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15 to 20 minutes). If irritation persists, get medical attention.
- **Inhalation:** Remove source of contamination or move victim to fresh air. If breathing has stopped, perform artificial respiration and administer oxygen. Avoid mouth-to-mouth resuscitation. Keep person warm and at rest. Treat symptomatically and supportively as and when required.
- **Ingestion:** Have victim rinse mouth thoroughly with water. If the person is alert and respiration is not depressed, give large quantity of water to drink. Never give anything by mouth to an unconscious person. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen.

NOTE TO PHYSICIAN:

Treat symptomatically. Gastric lavage is not normally required.

However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate.

RESISTANCE WARNING

SPINOSAD 480 SC is a **group code 5A insecticide**. Any insect population may contain individuals naturally resistant to **SPINOSAD 480 SC** and other **group code 5A insecticides**. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly. These resistant insects may not be controlled by **SPINOSAD 480 SC** or any other **group code 5A insecticides**.

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.
 - **Do not** use less than recommended label rates of any insecticides.
 - Target applications preferably early instar larvae and eggs of the pest whenever possible.
- For specific information on resistance management contact the registration holder of this product.

MODE OF ACTION:

Spinosad is a spinosyn (naturalyte) insecticide (IRAC group 5) with contact and stomach action. It acts by exciting the insect nervous system, leading to involuntary muscle contractions and paralysis. Nicotinic acetylcholine receptor (nAChR) allosteric modulators – Site I.

PRODUCT INFORMATION:

1. Effect on beneficial Insects:

- Moderately toxic to bees.
 - **SPINOSAD 480 SC** is toxic to bees when exposed to direct spray, or sprayed flowering crops, before spray deposit is dry.

Do not apply directly to foraging Bees, or Bee colonies.

- Apply only at night when crop is flowering or other food vegetation is within 500 m from the spraying area.
- Allow at least three (3) hours between application and foraging period of Bees.
- Co-operate and synchronise in this regard with neighbours, beekeepers and local extension services when applying in the vicinity of crops in flower stage, especially where pollination is required for production of fruit. Once the spray deposit has dried, there is minimal effect on Bees.
- Harmful to "Parasitoids".
- Harmless to Predatory Mites.
- Slightly harmful to Coccinellidae.
- Slightly harmful to Neuroptera.
- Citrus beneficial insects:
 - *Chilochorus nigritus* – Slightly harmful.
 - *Aphytis lingnanensis* – Harmful.
 - *Coccidoxenoides peregrinus* – Very harmful.
 - *Trichogrammatoidea cryptophlebiae* – Slightly harmful.
 - *Euseius citri* – Slightly harmful.

2. Use of SPINOSAD 480 SC in an Integrated Pest Management (IPM) Programme:

SPINOSAD 480 SC can be used as part of IPM programmes in various crops. Apply **SPINOSAD 480 SC** when regular scouting of fields/orchards confirms that target pest infestations have reached the economic threshold.

SPINOSAD 480 SC used under Good Agricultural Practices (GAP), does not have a significant impact on beneficial (parasitic or predaceous) insects and mites, other than reducing the target pest species as a food source. Despite **SPINOSAD 480 SC** being classified as "harmful" to Parasitoids, a rapid recovery in the numbers of beneficial insects occurs after application. These beneficial arthropods will assist in the extended natural control of pest species and reduce the potential for secondary pest outbreaks for which additional insecticide treatments may be required. Where **SPINOSAD 480 SC** is applied in tank mixtures with other insecticides with less selectivity with regard to beneficial predatory insects, the advantage of **SPINOSAD 480 SC** to the IPM programme may be reduced.

DIRECTIONS FOR USE: USE ONLY AS DIRECTED

SPINOSAD 480 SC is a suspension concentrate, which should be mixed with water and applied as a foliar spray with ground equipment equipped for conventional insecticide application

COMPATIBILITY:

SPINOSAD 480 SC is generally compatible with fungicides and non-ionic adjuvants with spreading and penetrating properties. The compatibility of **SPINOSAD 480 SC** with other products depends on the formulations of the respective products as well as the quality of the spray water to be used.

Do not apply **SPINOSAD 480 SC** in muddy water. It is possible that formulations may change from time to time. It is therefore recommended, especially when using wetting agents, that a small-scale physical compatibility test (jar test) be done prior to the tank mixture being made using relative proportions of the tank mix ingredients. If foliar fertilizers are used, the compatibility test must be repeated with each batch. Always consult the labels of products to be tank mixed with **SPINOSAD 480 SC**

MIXING INSTRUCTIONS:

Shake the **SPINOSAD 480 SC** container well before use. Replace cap directly after use. A spray tank pH between 6.0 and 9.0 is suggested to achieve maximum performance of **SPINOSAD 480 SC**, a low pH value (< pH 6) of the spray mixture will decrease the residual performance. If the water source is outside of this pH range, or tank mixing other pesticides, adjuvants, or foliar nutrients will cause the pH to fall outside this range, consider adjusting the spray tank pH to be between 6.0 and 9.0 before adding **SPINOSAD 480 SC**. To do this, add all other tank mix components first, then check the spray tank pH, adjust if desired, and then add **SPINOSAD 480 SC**.

SPINOSAD 480 SC alone:

Fill the spray tank with water to half (½) of the required spray volume, start to agitate and add a buffer if required. Add the correct quantity of **SPINOSAD 480 SC** to the spray tank while agitating to form a homogenous emulsion. Fill the spray tank with rest of the water while agitating. Maintain sufficient agitation during application to ensure uniformity of the spray mix.

SPINOSAD 480 SC tank mixture:

Fill the spray tank with water to one quarter (¼) of the required spray volume. While agitating the spray tank water, add the products in the following sequence – buffer, wettable powders, water dispersible granules, **SPINOSAD 480 SC** and other suspension concentrates, emulsifying concentrates, soluble concentrates and surfactants/adjuvants last. Top up the mixing tank with clean water to the required spray volume whilst agitating. Agitate constantly and vigorously before and during application. To prevent foam formation, avoid mixing air into the spray mixture. Use the spray mixture immediately, **do not** leave in spray tank for a length of time, e.g., overnight. Clean all equipment thoroughly after use and dispose of wastewater without polluting the environment.

APPLICATION:

Ensure that the equipment is correctly calibrated and is checked regularly to ensure even and accurate application. Maintain sufficient agitation during application to ensure uniformity of the spray mix. Repeat the application if it rains within two (2) hours after application. Hollow cone nozzles suitable for insecticide applications are recommended. The following recommendations are provided for effective **SPINOSAD 480 SC** applications:

Row crops applications:

- Use conventional ground spray equipment, correctly calibrated, for optimal coverage of target crop.
- Align boom and nozzles for uniform coverage of target crop.
- Certain conditions may require nozzles on drop arms for uniform crop coverage.
- Always follow manufacturer's recommendations for ideal nozzle spacing, pressure, and boom height.

Fruit tree crops applications:

Use conventional orchard spray equipment, correctly calibrated, for optimal coverage of target crop and the correct rate per hectare.

Deciduous fruit tree crops applications:

- Apply **SPINOSAD 480 SC** as a high volume spray to deciduous fruit trees.
- Calculate the required spray (water mixture) volume (ℓ) per hectare (ha) for high volume application using the tree row volume (TRV) calculation:
 - TRV (Green tip to +/- 30 % blossom)
 $\ell \text{ water/ha} = [(Tree \text{ Height} \times Tree \text{ Diameter} \times 937) / Row \text{ Width}] \times 60 \%$
 - TRV (Full blossom to +/- middle November)
 $\ell \text{ water/ha} = [(Tree \text{ Height} \times Tree \text{ Diameter} \times 937) / Row \text{ Width}] \times 80 \%$
 - TRV* (Full leaf)
 $\ell \text{ water/ha} = (Tree \text{ Height} \times Tree \text{ Diameter} \times 937) / Row \text{ Width} \times 100 \%$

Use the above formula to calculate the required spray volume of **SPINOSAD 480 SC** per hectare.

It is important that the correct amount of **SPINOSAD 480 SC** per hectare is applied.

Tree height and tree width must be measured when trees are in full flush.

*Tree Row Volume (TRV) formula described by Unrath (Deciduous Fruit Grower Nov. 1986)

Table grape applications:

- Apply **SPINOSAD 480 SC** as a high volume spray to table grapes.
- Calculate the spray volume (ℓ) per hectare (ha) required for a high volume application during the specified growth stage using the following guidelines:

Growth Stage	Suggested volume of spray mixture per hectare for high volume application
2.5 cm to 25 cm shoot length	500 to 750 litres
25 cm shoot length to just prior to flowering	750 to 1000 litres
Flowering to pea berry stage	1000 to 1200 litres
Pea berry stage to harvest	1200 to 1500 litres

ADJUVANT:

Registered adjuvants may be used to improve the control of leafminers and thrips in situations where achieving uniform plant coverage is difficult (such as closed crop canopies or dense foliage), or if the fruit/plant surface to be treated is waxy or difficult to wet.

APPLICATION RATES

CROP/PEST	DOSAGE RATE	REMARKS
Potatoes Potato tuber moth larvae (<i>Phthorimaea operculella</i>) African Bollworm (<i>Helicoverpa armigera</i>) Potato leaf miner (<i>Liriomyza huidobrensis</i>) Tomato leafminer (<i>Tuta absoluta</i>)	30 mℓ (150 to 300 mℓ / ha) PLUS 150 to 250 mℓ of light or medium narrow range mineral spray oil OR A registered wetter at the registered dosage rate for use on potatoes per 100 ℓ	Apply as part of a spray programme as a full cover spray in 500 to 1000 litres water per hectare every 7 to 10 days. Commence with application when the pests are first noticed or apply as a follow-up application in a spray programme following insecticides from a different class as required in a resistant management programme. Apply a minimum of 2 consecutive SPINOSAD 480 SC sprays to ensure effective control of pests. The volume of spray mixture applied per hectare depends on plant height and density of the leaf canopy. Start with a minimum of 500 litres water per hectare on young plants and increase volume up to 1000 litres water per hectare as the crop size and volume increases. Use the shorter 7 day spray interval under heavy infestation pressure or when climatic conditions favour the pest (e.g. during summer months or when beneficial insects are absent). As a resistance management strategy, do not apply SPINOSAD 480 SC more than (4) four times consecutively in a 28-day period. Alternate SPINOSAD 480 SC in a spray programme with an insecticide from a different chemical class for the duration of at least one generation of the pest. Do not apply SPINOSAD 480 SC more than 6 times per cultivation period. Potato leaf miner (<i>Liriomyza huidobrensis</i>): Use SPINOSAD 480 SC in rotation with ABBA 18 EC (L10503) in a resistance management spray programme. Ridge at least twice during growing season to assist in control of Potato tuber moth.

CROP/PEST	DOSAGE RATE	REMARKS
Pome Fruits (Apples and Pears) African Bollworm <i>Helicoverpa armigera</i>	20 mL/ 100 ℓ	Apply as a high volume, cover application when the pest infestation levels are at or above threshold level. NOTE: As a single corrective spray against bollworm, SPINOSAD 480 SC is more effective against early instar larvae.
(Apples) Thrips (Various species including Western Flower Thrip <i>Frankliniella occidentalis</i>)	15 mL/ 100 ℓ	Early Thrip damage normally occurs during the period early blossom to just after blossom. Hot weather conditions favours Thrip activity. Recommended monitoring methods must be practised to determine the presence and extent of the pest, especially during the susceptible stage. Apply SPINOSAD 480 SC during flowering as a high volume cover application when pest infestation levels are at, or above the threshold levels. Depending on the duration of the flowering period and the infestation level, a follow-up treatment may be required within 7 to 10 days to obtain adequate control. Resistance management: SPINOSAD 480 SC should not be applied in total more than (4) four times per season on apples.

CROP/PEST	DOSAGE RATE	REMARKS
Table Grapes African Bollworm <i>Helicoverpa armigera</i>)	20 ml	Bollworm: Apply SPINOSAD 480 SC as a high volume cover application, refer to directions for use (application recommendations). Commence spraying when infestation level is at or above threshold level. NOTE: Applied as a single corrective spray, SPINOSAD 480 SC is more effective against the early instar larvae stage of bollworm.
Thrips (Various species including Western Flower Thrip <i>Frankliniella occidentalis</i>)	15 ml	Thrips: Apply SPINOSAD 480 SC during flowering as a high volume cover application when thrips threshold level is reached, refer to directions for use (application recommendations). The critical period during which thrips are prone to cause the most damage is normally during the period of early flowering to shortly after flowering. In some areas and under favourable conditions (hot and dry weather), thrips may occur at a later stage during the season. Regular monitoring is important to determine when the first application must commence. Depending on the duration of the flowering period and the level of infestation, a follow-up application within 5 – 7 days may be required for adequate control. Resistance management: Apply no more than two (2) consecutive applications in total per season, adhere to 28 days withholding period.

CROP/PEST	DOSAGE RATE	REMARKS
Citrus African Bollworm (<i>Helicoverpa armigera</i>)	20 ml	Apply SPINOSAD 480 SC as a high volume cover application, refer to directions for use (application recommendations). Commence spraying when infestation level is at or above threshold level. NOTE: Applied as a single corrective spray, SPINOSAD 480 SC is more effective against the early instar larvae stage of bollworm.
Citrus Thrips (<i>Scirtothrips aurantii</i>)	15 ml PLUS 300 ml of light or medium narrow range mineral spray oil	Apply SPINOSAD 480 SC as a light to medium cover application to the point of run-off. Commence spraying at 90 % petal fall at the first signs of infestation. Note that hot weather conditions favour thrip activity. Depending on the level of infestation, follow-up applications within 7 – 10 days may be required for adequate control.