



syngenta

Reg. No. L5343 Act No. 36 of 1947 N-AR 1012 (Namibia) W130324 (Botswana)

An emulsifiable concentrate insect growth inhibitor (IGI) for the control of thrips and Lepidopteran pests on crops as listed.

GROUP 15 INSECTICIDE

Active Ingredient:
lufenuron (benzamide)..... 50 g/l

Product names marked ® or ™, the ALLIANCE FRAME, the SYNGENTA Logo and the PURPOSE ICON are Trademarks of a Syngenta Group Company



Hazard statements: Flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause drowsiness or dizziness. Very toxic to aquatic life with long-lasting effects. **Precautionary statements:** Keep out of reach of children. **Prevention:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. **Response:** If swallowed, immediately call a POISON CENTRE/doctor. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting. In case of fire, use dry sand, dry chemical or alcohol-resistant foam to extinguish. Collect spillage. **Storage:** Store locked-up. Protect from sunlight. Store in a well-ventilated area. **Disposal:** Dispose of contents/container to an approved waste disposal plant.
DANGER

EMERGENCY TEL NO.:
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1. WARNINGS:

Hazard statements: Flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause drowsiness or dizziness. Very toxic to aquatic life with long-lasting effects.

Withholding periods: Minimum number of days between last application and harvest.

BARLEY.....	35 days
CRUCIFERAE.....	7 days
DRY BEANS.....	35 days
GRAIN SORGHUM.....	35 days
GROUNDNUTS.....	35 days
LEGUME VEGETABLES.....	14 days
MAIZE.....	35 days
PEPPER GROUP (Capsicums).....	7 days
SOYBEANS.....	35 days
SUNFLOWERS.....	35 days
SWEETCORN.....	14 days
TOBACCO.....	66 days
TOMATOES.....	3 days
WHEAT.....	35 days

NOTE: Compliance with these withholding periods will ensure that residues do not exceed local maximum residue limits, 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's and recommended withholding periods.

- Handle with care.
- Irritates skin and eyes.
- Avoid storage below -5 and above 35°C.
- Keep out of reach of children, uninformed persons and animals.
- Store away from food and feed.
- **Flammable:** Do not store near open flames.
- Overripe tomatoes, which have been treated with **SORBA**, should not be used as cattle feed.
- **Re-entry:** Do not enter treated area until spray deposit has dried unless wearing protective clothing.

- **Aerial application:** Notify all inhabitants in the immediate vicinity of the area to be sprayed and issue the necessary warnings. Do not spray over or allow the drift to contaminate water or adjacent areas.

1.1 Environment

- **Highly toxic to crustaceans:** Direct contamination of surface water must be avoided. No irreversible damage to aquatic systems is to be expected when the product is used according to use prescriptions.
- **Honeybees:** **SORBA** is safe for honeybees.

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 weed 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 and the environment, or harm to people or animals 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, that could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

2. PRECAUTIONS:

Precautionary statements: Keep out of reach of children. **Prevention:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. **Response:** If swallowed, immediately call a POISON CENTRE/doctor. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting. In case of fire: Use dry sand, dry chemicals or alcohol-resistant foam to extinguish. Collect spillage. **Storage:** Store locked-up. Protect from sunlight. Store in a well-ventilated area. **Disposal:** Dispose of contents/container to an approved waste disposal plant.

- Avoid excessive drift - do not treat if wind velocity exceeds 2 m/s (7 km/h).
- Wear suitable protective clothing when preparing spray mixture.
- Avoid eye and skin contact.
- Do not inhale spray mist.
- Wash with soap and water after use.
- Wash contaminated clothing after use.
- Do not eat, drink, or smoke while mixing or applying the product or before washing hands and face.
- Clean spray equipment after use. Dispose of rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Rinse the empty container three (3) times with a volume of clean water equal to a minimum of 10% of the container. Add the rinsate to the contents of the spray tank before destroying the container.
- Destroy empty container in the prescribed manner.
- Do not use the empty container for any other purpose.
- Do not contaminate food, drinking water and eating utensils.

3. RELEVANT SUBSTANCES:

Chemical name	
solvent naphtha (petroleum), heavy arom.; kerosine (unspecified)	
Classification	Concentration (% w/w)
STOT SE 3; H336 (central nervous system) Asp. Tox. 1; H304 Aquatic Chronic 2; H411	≥ 50 - < 70
Chemical name	
cyclohexanone	
Classification	Concentration (% w/w)
Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318	≥ 20 - < 30
Chemical name	
lufenuron (ISO)	
Classification	Concentration (% w/w)
Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity):10 M-Factor (Chronic aquatic toxicity):100	≥ 2,5 - < 10
Chemical name	
calcium bis (dodecylbenzenesulphonate), branched	
Classification	Concentration (% w/w)
Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 2; H411	≥ 3 - < 10

4. RESISTANCE MANAGEMENT:

SORBA is a group code 15 insecticide. Any insect population

may contain individuals naturally resistant to **SORBA** and other group code 15 insecticides. The resistant individuals can eventually dominate the insect population if these insecticides are used repeatedly and exclusively in programs. These resistant insects may not be controlled by **SORBA** or any other group code 15 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 programs.

No known cross-resistance to **SORBA** with organophosphates or other insecticides exists.

Syngenta cannot accept responsibility for any losses that may result from the failure to control pests resistant to SORBA.

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

5. PRODUCT CHARACTERISTICS:

- **SORBA** is a larvicide acting by inhibition of chitin biosynthesis, thus interfering with the formation of the cuticle.
- It is a non-systemic IGI with strong stomach and moderate contact activity.
- **SORBA** is effective against pests resistant to organophosphates, carbamates and pyrethroids.
- **SORBA** is highly active against leaf feeding Lepidopterous larvae. It also exhibits ovicidal activity.

6. CROP TOLERANCE:

When used as recommended, **SORBA** is well-tolerated by all crops. In the event of any doubt, crop tolerance on sensitive or new varieties should be verified prior to application.

7. RESIDUES:

When used as directed, no unacceptable residues will occur in or on the harvested crop.

8. INTEGRATED PEST MANAGEMENT:

- **SORBA** is safe to adult stages of predators at the recommended dosage. It is toxic to immature stages of some predators.
- It is safe to **predacious mites**.

9. DIRECTIONS FOR USE: Use only as indicated.

9.1 Compatibility

The compatibility of **SORBA** with other products may be influenced by the formulation of the products involved as well as the quality of the water. Since the formulation of other products may change without the knowledge of Syngenta and the quality of water may vary from farm to farm, a physical compatibility test should always be carried out prior to application.

SORBA is compatible with PROCLAIM (L7581).

Important: SORBA is not compatible with any remedies containing mancozeb, carbamates, alkaline products such as Bordeaux mixture and copper based compounds. Sulphur and captab are also not suitable for mixing with **SORBA**.

9.2 Mixing Instructions

- Shake the container well before use.
- Add the measured quantity of concentrate to clean water in a half-filled spray tank.
- Maintain agitation while topping up.
- Keep the spray mixture well stirred and apply within five (5) hours. Do not prepare more spray mixture than is needed for the immediate operation.
- **SORBA** is not pH sensitive.

9.3 Equipment and Spray Volume

- Ensure the equipment is correctly calibrated to give an even distribution at the correct volume.
- Tractor sprayers with boom and nozzles, tractor mist blowers, aerial application, knapsack sprayers and motorised mist blowers are recommended.
- Chemigation is recommended for potatoes only.
- Avoid spraying during the heat of the day or if rain is imminent.
- After drying the product is rain-fast.

9.3.1 Aerial application

Aerial application of this product may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS 10118 (Aerial Application of Agricultural Remedies). It is important to ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. It is therefore essential that the following criteria are met:

a) Application parameters:

- **Volume:** A volume of 30 ℓ/ha is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy or be held responsible for any adverse effects if the product is applied aerially at a lower volume rate than recommended above.
- **Droplet coverage:** A droplet coverage of 30 - 40 droplets per cm² must be recovered at the target.
- **Droplet size:** A droplet spectrum with a VMD of 250 - 280 microns is recommended. Ensure that the production of fine droplets (less than 150 microns - high drift and evaporation potential) is restricted to a minimum.
- **Flying height:** The height of the spray boom should be maintained at 3 - 4 metres above the target. Do not spray when aircraft is in a climb, at the top, during a dive, or when banking.

b) Equipment:

- Use suitable atomising equipment (hydraulic nozzles or rotary atomisers) that will produce the desired droplet size and coverage but which will ensure the minimum loss of product either through endo-drift (within target field) or exo-drift (outside target field).

- The operator must use a setup that will produce a droplet spectrum with the lowest possible relative span.
- All nozzles/atomisers should be positioned within the inner 60 - 75% of the wingspan to prevent droplets from entering the wingtip vortices.

c) Meteorological conditions:

- The difference in temperature between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 8°C. The addition of a suitable anti-evaporant is recommended if the VMD of the droplets is less than 200 - 250 microns.
- Stop spraying if the wind speed exceeds 15 km/h.
- Aerial application of this product must not be done under turbulent, unstable conditions during the heat of the day when rising thermals and downdraughts occur. Also note that the application of this product under temperature inversion conditions (spraying in or above the inversion layer) may lead to the following:
 - Reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage).
 - Damage to other sensitive crops and or non-target areas through the movement of the suspended spray cloud away from the target field.

It is essential to obtain assurance from the aerial spray operator that the above requirements are met.

9.4 Application Rates

CRUCIFERAE

(Cabbage group. Includes broccoli, brussel sprouts, cabbage and cauliflower)

Pest	Dosage	Remarks
Diamond-back moth (<i>Plutella xylostella</i>)	60 - 80 mℓ/ 100 ℓ water or 600 - 800 mℓ/ha	<ul style="list-style-type: none"> • Commence application when moths are noticed and oviposition occurs. • Repeat every 7 - 10 days as necessary. • More than one (1) successive application of SORBA is required to achieve acceptable control (80 - 90%). • Do not exceed four (4) applications per crop cycle. • Ensure thorough wetting of cabbage plants and apply SORBA with an appropriate adjuvant. • As a resistance strategy, SORBA applications must be preceded or followed by applications of other registered products from unrelated chemical groups.

MAIZE, SWEETCORN, CRUCIFERAE, SOYBEANS, GRAIN SORGHUM, SUNFLOWERS, LEGUME VEGETABLES [succulent seeds and immature pods: Includes peas (green) and beans (green)], **DRY BEANS, GROUNDNUTS, WHEAT and BARLEY**

Pest	Dosage	Remarks
Armyworms (<i>Spodoptera</i> spp.) False armyworm (<i>Leucania loreyi</i>)	500 - 1 000 mℓ/ha SORBA plus 200 g/ha PROCLAIM	<ul style="list-style-type: none"> Apply SORBA as a tank-mix with PROCLAIM at the first signs of infestation. Apply as a block of two (2) applications seven (7) days apart and then alternate with a product with a different mode of action, e.g., AMPLIGO (L8685). <p>Note: For MAIZE and SWEETCORN, apply as soon as feeding damage is observed (small windows in the leaves), when larvae are still outside the cobs. Once inside, larvae will not be controlled.</p>

PEPPER GROUP

Pest	Dosage	Remarks
Thrips (<i>Frankliniella occidentalis</i>)	200 mℓ/100 ℓ water	<ul style="list-style-type: none"> Commence application as soon as the pest is noticed. Apply SORBA in blocks of 2 - 3 applications at 7-day intervals. Alternate SORBA blocks with products from non-related chemistry groups. More than one (1) successive application of SORBA is required to achieve acceptable control (80 - 90%). Do not exceed more than three (3) application per growing cycle.

POTATOES

Pest	Dosage	Remarks
Potato tuber moth larva (<i>Phthorimaea operculella</i>)	800 mℓ/ha	<ul style="list-style-type: none"> First application post-flowering at the onset of senescence (when leaves start to colour) or during the bulking stage when tubers start to fill. Repeat as necessary at 14-day intervals

POTATOES cont.

Pest	Dosage	Remarks
Potato tuber moth larva (<i>Phthorimaea operculella</i>)	800 mℓ/ha	<ul style="list-style-type: none"> until termination of foliage. Use in at least 500 ℓ water/ha. Thereafter, apply at 7 - 10-day intervals until the crop is lifted. Potatoes left in the soil for an extended period will only be protected against tuber moth larvae when SORBA is applied as directed. <p>Aerial application Apply as above in 30 ℓ water/ha.</p>

Comments
<ul style="list-style-type: none"> SORBA applications should be preceded by a maintenance program of non-related insecticides during the early part of the crop cycle. More than one (1) successive application of SORBA is required to achieve acceptable control. The number of applications will depend on the degree of re-infestation. DO NOT exceed six (6) successive applications per crop cycle. Ridge at least twice during growing season.

TOBACCO

Pest	Dosage	Remarks
Potato tuber moth larva (Tobacco leaf miner)	100 mℓ/100 ℓ water	<p>Before transplanting</p> <ul style="list-style-type: none"> A single application seven (7) days prior to transplanting can be done on seedlings in seed beds to protect them just after transplanting. <p>After transplanting</p> <ul style="list-style-type: none"> First application must be done 2 - 3 days after transplant as a directed spray in a 30 cm wide band over the row. Follow-up with a second application seven (7) days after the first. Apply two (2) more sprays at 14-day intervals.

Comments
<ul style="list-style-type: none"> More than one (1) successive applications of SORBA is required to obtain acceptable control. Do at least four (4) applications in the fields. Apply SORBA in such a way that the plants are fully covered. Increase the spray volume as the plants grow. Young transplants: Apply in a 30 cm wide band over the rows. SORBA that is applied on the soil on both sides of the rows will also kill freshly laid potato tuber moth eggs.

TOBACCO cont.

- **Older transplants:** (third and fourth applications). Ensure that the lower halves of the plants are thoroughly covered. If necessary, rows must be sprayed from both sides.

TOMATOES

Pest	Dosage	Remarks
Potato tuber moth larva (<i>Phthorimaea operculella</i>)	80 ml/100 ℓ water	<ul style="list-style-type: none">• Commence application at the onset of infestation or when moths are noticed. Repeat as necessary every 7 - 10 days.• Should the first application occur in the nursery, apply a second application as soon as the transplanted seedlings are established.• Use 800 - 1 200 ml/ha SORBA for low volume applications on established tomatoes.• Will also control tomato semi-looper (<i>Chrysodeixis acuta</i>) when present at the time of application.• Refer COMMENTS below.

Comments

- More than one (1) successive applications of **SORBA** is required to achieve acceptable control.
- **DO NOT** exceed six (6) applications per crop cycle.
- The number of applications will depend on the degree of re-infestation.
- Dosage rate will depend on plant size and foliage density.
- **Young transplants:** Use at least 150 ℓ spray mixture per hectare as a directed application.
- **Established plants:** Dense foliage will require 500 - 1 500 ℓ spray mixture/ha.
- For trellised tomatoes, treat rows from both sides. Wet the entire plant thoroughly but avoid excessive run-off.
- For control of tomato semi-looper, use 800 - 1 200 ml **SORBA** per hectare for low-volume application and repeat at 7-day intervals.

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