

#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

September 28, 2022

Teresa Cox Senior Registration Manager Vestaron Corporation 600 Park Offices Dr., Suite 117 Research Triangle Park, NC 27709

Subject: Non-PRIA (Pesticide Registration Improvement Act) Labeling Amendment – Amending the Label to Add a Sub-Label C, Correcting Typographical Errors, Adding a New Pest Species, and Adding an Alternate Brand Name
 Product Name: VST-006340 LC
 EPA Registration Number: 88847-6
 EPA Receipt Date: 07/06/2022
 Action Case Number: 00377257

Dear Ms. Cox:

The amended labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable.

The alternate brand name, Spear<sup>®</sup>-RC has been added to the registration, and our records have been updated accordingly. This approval does not affect any terms or conditions that were previously imposed on this registration. You continue to be subject to existing terms or conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR § 152.3.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the U.S. Environmental Protection Agency (EPA). If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should EPA find or if it is brought to our attention that a website contains statements or claims substantially differing from statements or claims made in connection with obtaining a FIFRA

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section 3 registration, the website will be referred to EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions, please contact Stephanie Kelly by via email at kelly.stephanie@epa.gov.

Sincerely,

Alan Reynolds, Team Leader Emerging Technologies Branch Biopesticides and Pollution Prevention Division (7511M) Office of Pesticide Programs

Enclosure: New Stamped Master Label

#### MASTER LABEL - containing:

Sublabel A: Greenhouse and Field Use

Sublabel B: Greenhouse and Field Use in Tank Mixes with Bt

Sublabel C: Row Crop Use in Tank Mixes with Bt

**Alternate Brand Names** 

## **A C C E P T E D** 09/28/2022

GROUP 32

INSECTICIDE

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 000047

<sup>\*\*\*</sup> 88847-6

## VST-006340 LC Biological Insecticide/Miticide

Active Ingredient:	
GS-omega/kappa-Hxtx-Hv1a*	2.0%
Other Ingredients	<u>98.0%</u>
Total	

Contains 0.17 lb active ingredient per gallon \*CAS No. 2307677-15-0

## KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See Inside Booklet for Additional Precautionary Statements and Directions for Use

FIRST AID	
lf in eyes	• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.
	• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
	Call a poison control center or doctor for treatment advice.
lf on skin or clothi	ng  Take off contaminated clothing.
	• Rinse skin immediately with plenty of water for 15 – 20 minutes.
	Call a poison control center or doctor for treatment advice.
	HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-535-5053 for emergency medical treatment information and chemical emergency assistance.

EPA Reg. No.: 88847-6 Net Contents:\_\_\_\_\_[Gal] [Liters] Made in USA

Manufactured for: Vestaron Corporation 600 Park Offices Drive, Suite 117 PO Box 13137 Research Triangle Park, NC 27709 EPA Est. No.: XXXXX-XX-XXX Lot No: XXXX

GROUP 32 INSECTICIDE

# VST-006340 LC

**Biological Insecticide/Miticide** 

Contains 0.17 lb active ingredient per gallon \*CAS No. 2307677-15-0

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Manufactured for: Vestaron Corporation 600 Park Offices Drive, Suite 117 PO Box 13137 Research Triangle Park, NC 27709

#### PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals -CAUTION. Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Wear protective eyewear and waterproof gloves. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

#### Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- waterproof gloves
- shoes plus socks
- protective eyewear

Follow the manufacturer's instructions for cleaning / maintaining PPE. If no instructions are available, use detergent and hot water for washables. Keep and wash PPE separately from other laundry.

### USER SAFETY RECOMMENDATIONS Users Should:

Remove clothing/PPE immediately if pesticide get inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Environmental Hazards:** For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

#### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and Restricted-Entry Interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. Do not enter or allow worker entry into treated areas during the Restricted Entry Interval (REI) of 4 hours unless wearing the appropriate personal protective equipment.

Do not enter or allow workers to enter the treated greenhouse or enclosed space until the ventilation requirements in 40 CFR 170.405(b)(3) have been met and the Restricted Entry Interval (REI) of 4 hours has expired. Until then, only handlers wearing the appropriate personal protective equipment can enter the greenhouse or enclosed space.

PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water) is:

- coveralls
- waterproof gloves
- shoes plus socks
- protective eyewear

#### **PRODUCT INFORMATION**

VST-006340 LC is a biological insecticide and miticide that contains the peptide active ingredient GS-omega/kappa-Hxtx-Hv1a. It is for use on ornamental plants and edible crops as an effective means for controlling pests such as aphids, broad mites, spider mites, thrips and whiteflies, as well as psyllids and spotted-wing drosophila. VST-006340 LC is a contact insecticide that functions primarily as a central nervous system inhibitor of target pests infesting labeled crops. VST-006340 LC is mixed with water and applied as a foliar spray

#### **GENERAL USE INSTRUCTIONS**

The active ingredient in VST-006340 LC largely acts through contact. VST-006340 LC has no systemic activity, therefore thorough coverage of infested plant parts is necessary for best performance. Small droplet size will improve coverage and penetration of the crop canopy. Use of a non-ionic or blended organosilicone surfactant will also improve coverage.

VST-006340 LC is effective on immature and adult stages of the listed insect and mite pests. Earlier or younger developmental stages should be considered more susceptible. Careful scouting to detect infestations early is important for optimal results. Repeat applications at 3-10day intervals (or at intervals necessary to maintain control) depending upon plant growth rate, pest activity and other factors.

VST-006340 LC may be applied up to and including the day of harvest (Pre-harvest interval = 0 days).

VST-006340 LC has been evaluated for phytotoxicity on a variety of edible and non-edible crops under various normal growing conditions. It is not feasible, however, to test all crop varieties in all mixtures and combinations.

Therefore, prior to treating the entire crop, test a small portion of the crop for sensitivity.

#### Mixing directions:

Do not add VST-006340 LC to the mix tank before introducing the desired amount of water. Add water to the mix tank. Start the mechanical or hydraulic agitation to provide moderate circulation before adding VST-006340 LC. Add the desired volume of VST-006340 LC to the tank and continue circulation. Maintain circulation while loading and spraying. Do not store tank mixes overnight.

#### Tank mixing and compatibility:

Do not combine VST-006340 LC in the spray tank with other pesticides, surfactants, adjuvants or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective, and non-injurious under your use conditions. Follow the most restrictive of the labeling limitations and precautions of all products used in mixtures.

To ensure compatibility of tank-mix combinations, evaluate prior to use. Use a jar test to determine the physical compatibility of this product with other products. Add the proportionate amounts of the products to one quart of water with agitation. Add dry formulations first, then flowables, then emulsifiable concentrates. After thoroughly mixing, let this mixture stand for 5 minutes. If the combination remains mixed or can be readily remixed, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

When a surfactant is used, add it to the diluted spray solution last. Use the recommended dosage advised in the respective surfactant label to the diluted VST-006340 LC spray solution and mix thoroughly by agitation to prepare the spray solution for application.

#### Integrated Pest Management (IPM):

VST-006340 LC is an important tool for sound pest management whenever pesticide use is necessary. Because the active ingredient has a novel mode of action, VST-006340 LC provides a new control method for the labeled pests. It effectively targets immature and adult life stages. Based on sound scouting practices, use VST-006340 LC preventively to avoid infestations, as a spot spray to suppress localized infestations, or as a blanket spray to prevent outbreaks. Applying VST-006340 LC in rotation with other insecticides as a part of a resistance management program will reduce inputs of conventional insecticides and may also delay development of pesticide resistance. Based on a variety of evaluations, VST-006340 LC is not disruptive to the benefits of biological control agents or other non-target species. It is not feasible, however, to test all species of beneficials in all situations. Therefore, consult with a pest control advisor, extension agent or the manufacturer before treating an entire crop where beneficial insects serve as part of an IPM program. Consult local agricultural authorities for IPM strategies that are specific to your crop and location.

#### **Resistance Management:**

VST-006340 LC contains the biological peptide GSomega/kappa-Hxtx-Hv1a, which as a Group 32 Insecticide and is not known to be cross-resistant to any other class of insecticide. Repeated use of any mode of action, however, has the potential for pests to develop insecticide resistance. To delay development of resistance, the following practices are recommended:

- Carefully follow the specific guidelines within the use directions.
- Avoid using the same active ingredient or mode of action on consecutive generations of insects. Multiple applications to reduce a single generation, however, are acceptable. Treat the next generation with a different mode of action.
- Avoid using less than labeled rates of any insecticide when applied alone.
- Target the insect early in development to achieve the greatest benefit from the insecticide.
- Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

#### AERIAL DRIFT REDUCTION ADVISORY INFORMATION

#### General:

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. Where states have more stringent regulations, they should be observed. Note: This section is advisory in nature and does not supersede the mandatory label requirements.

#### Boom Width:

For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3-10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or crop canopy.

#### Application Height:

Do not make aerial application at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### Swath Adjustment:

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

#### Wind:

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### **Temperature Inversions:**

Do not apply during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

#### Sensitive Areas:

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non- target crops) is minimal (e.g. when wind is blowing away from the sensitive areas). Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.

#### **APPLICATION INSTRUCTIONS**

#### **GREENHOUSE AND NURSERY USE DIRECTIONS**

VST-006340 LC may be used in greenhouses (including high tunnels, lath and shadehouses, interiorscapes and hoop houses) and nurseries. Make applications with high pressure, low- volume or ultra-low-volume spraying and fogging equipment. VST-006340 LC is a contact insecticide so direct contact with the pest is essential for optimum performance. Better coverage and penetration of crop canopy is usually achieved when smaller spray droplets are applied. Use fine or very fine nozzles and preferably apply high pressure if hydraulic sprayer is used. Use of a non-ionic or blended organosilicone surfactant to improve coverage may increase performance.

For high-volume sprayers, mix 1-3 gallons of VST-006340 LC with water to a total volume of 100 gallons to prepare a 1-3% product solution. Apply as a foliar spray in enough volume per acre to achieve full coverage of the target crop

(50 -100 gallons of this spray solution are generally sufficient to treat 1 acre). For low-volume and ultra-lowvolume equipment, apply 1-3 gallons of VST-006340 LC per acre. Follow the equipment manufacturer instructions carefully to determine the appropriate amount of water and/or carrier for area coverage. Repeat applications at 3-10-day intervals depending upon plant growth rate, pest activity and other factors.

#### **DIPPING OR IMMERSION TREATMENTS**

VST-006340 LC may be applied using a pre-plant dipping application to vegetative or hardwood unrooted cuttings and transplants for control of labeled pests. To prepare the dipping solution, thoroughly mix 1 gallon of VST-006340 LC with 9 gallons of water for a 10% product solution. If plant sensitivity is a concern, this concentration may be reduced to 1 gallon of VST-006340 LC with 19 gallons of water for a 5% solution. Prior to treating the entire crop, test a small portion of the crop for sensitivity. Use caution when dipping geranium, petunia and salvia cuttings because some cultivars may be sensitive.

For unrooted cuttings, place into the tank loose, or in a mesh bag or immersion tray with top. To maximize coverage, do not pack cuttings too tightly. Immerse the cuttings into the VST-006340 LC solution, and gently move the plants around for 5-10 seconds, or just long enough to completely wet all surfaces. Verify that there are no dry surface areas.

For bare-root transplants, hold by the roots and immerse in the VST-006340 LC solution. Gently move around for 5-10 seconds, or just long enough to completely wet all surfaces of the leaves and stems, but not the roots. Verify that there are no dry surface areas.

For plugs and liners, turn the tray upside down, when practical, and dip the plant tops (stems and foliage) into the VST-006340 LC solution. Gently move around for 5-10 seconds, or just long enough to wet all surfaces.

Once cuttings and transplants are removed from the dipping solution, plant into potting mix or soil in the usual manner. Allow treated plants to dry before misting or watering. Observe the following general guidelines:

- Clean and disinfect the dipping tank and equipment before a new dip solution is prepared.
- Prepare only as much dip solution as can be used in one day. Do not use dip solution for more than one day.
- Prior to treating a new crop, test a small number of plants for sensitivity. Immerse in dipping solution, plant into growing media, and observe over several days for plant damage. Do not use dipping if there is any visible damage to test plants.
- If plant pathogens are a concern, prepare a new dipping solution regularly.
- Submerge just long enough to wet all plant surfaces.
- Agitate dip solution throughout use.
- Do not immerse stressed or wilted cuttings or transplants.

#### USE VST-006340 LC ON THE FOLLOWING CROPS:

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#### **GREENHOUSE AND NURSERY USES**

Insect/Mite Pest

Insect/Mite Pest	
Aphids, such as: Green Peach Aphid, Cotton/Melon	
Aphid	
Plant-feeding Mites, such as: Broad Mite,	
Lewis Mite, Twospotted Spider Mite,	
Spotted-wing Drosophila	
Thrips, such as:	
Onion Thrips, Tobacco Thrips	
Western Flower Thrips	
Whiteflies, such as: Greenhouse Whitefly, Sweet	
Potato Whitefly	
Crops	
Greenhouse Vegetables:	
Vegetable, Root and Tuber (Group 1), such as: Beet,	
Carrot, Potato, Radish, Sugarbeet	
Vegetable, Bulb (Group 3), such as: Garlic, Leek,	
Onion (Green and Bulb)	
Vegetable, Leafy Except Brassica (Group 4), such	
as: Celery, Endive, Lettuce, Parsley, Spinach	
Vegetable, Brassica Leafy (Group 5), such as:	
Broccoli, Brussels Sprouts, Cabbage, Cauliflower,	
Chinese Cabbage, Collards, Kale, Kohlrabi, Mustard	
Greens	
Vegetable, Legume (Group 6), such as: Bean, Lentil,	
Pea, Soybean,	
Vegetable, Fruiting (Group 8), such as: Eggplant,	
Pepper, Tomato	
Vegetable, Cucurbit (Group 9), such as: Cucumber,	
Melon, Squash, Watermelon	
Greenhouse/Nursery Flowers and Ornamental,	
Plants,	
such as: Bedding Plants, Container Stock, Cut	
Flowers, Ornamental Flowers, Ornamental Plants	
Greenhouse Herbs and Mint (Group 25), such as:	
Basil, Chive, Cilantro, Dill, Mint, Parsley, Rosemary,	
Sage, Thyme	
Greenhouse Fruit	
Fruit, Citrus (Group 10), such as: Grapefruit, Lemon,	
Lime	
Fruit, Stone (Group 12), such as: Cherry, Nectarine	
Peach, Plum, Prune	
Berry (Group 13), such as: Blackberry, Blueberry,	
Grape, Raspberry, Strawberry	
Hemp and Tobacco	

#### FIELD USE DIRECTIONS FOR FRUITS AND

**VEGETABLES:** Use high pressure for application of the spray solution. Apply 1-3 gallons of VST-006340 per acre.Better coverage and penetration of crop canopy is usuallyachieved when smaller spray droplets are applied. Use very fine nozzles to create a fine spray mist. Use of a non-ionic or blended organosilicone surfactant at 0.125% (v/v) to improve coverage may increase performance. Repeat applications at 3-10-day intervals depending upon plantgrowth rate, pest activity and other factors.

#### **FIELD USES**

FIELD USES		
Crops	Insect/Mite Pest	
Field Vegetables:	Plant-feeding Mites,	
	such as: Broad Mite	
Vegetable, Root and Tuber	Lewis Mite,	
(Group 1), such as: Beet,	Twospotted Spider Mite	
Carrot, Potato, Radish,		
Sugarbeet		
Vegetable, Bulb (Group 3),	Psyllids, such as:	
such as: Garlic, Leek,	Potato Psyllid	
Onion (Green and Bulb)	-	
Vegetable, Leafy Except		
Brassica (Group 4), such as:		
Celery, Endive, Lettuce,	Thrips, such as:	
Parsley, Spinach	Onion Thrips,	
Vegetable, Brassica Leafy	Tobacco Thrips,	
(Group 5), such as: Broccoli	Western Flower Thrips	
Brussels Sprouts, Cabbage,		
Cauliflower, Chinese Cabbage,		
Collards, Kale, Kohlrabi,	Whiteflies, such as:	
Mustard Greens	Sweet Potato Whitefly	
Vegetable, Legume (Group 6),		
such as: Bean, Lentil, Pea,		
Soybean,		
Vegetable, Fruiting (Group 8),		
such as: Eggplant, Pepper,		
Tomato		
Vegetable, Cucurbit (Group 9),		
such as: Cucumber, Melon,		
Squash, Watermelon		
Squash, watermeion		
Field Fruit and Berries:	Plant-feeding Mites,	
Fruit, Citrus (Group 10), such	such as: Broad Mite,	
as: Grapefruit, Lemon,	Citrus Rust Mite,	
Lime, Orange	Twospotted Spider Mite	
Fruit, Pome (Group 11), such	I wospotted Spider Mite	
as: apple, Pear	Pevilide such as: Asian	
	<b>Psyllids,</b> such as: Asian	
Fruit, Stone (Group 12), such	Citrus Psyllid, Pear	
as: Cherry, Nectarine, Peach,	Psylla Spotted wing	
Plum, Prune	Spotted-wing	
	Drosophila	
Berry (Group 13), such as:	Thrips, such as: Western	
Blackberry, Blueberry, Grape,	Flower Thrips	
Raspberry, Strawberry		
Tree No.45 (Orecord 44.40)	Diant faceline Mites	
Tree Nuts (Group 14-12)	Plant feeding Mites,	
	such as: Broad Mite,	
	Twospotted Spider Mite	

Hemp	Aphids, such as:
	Cotton/Melon Aphid,
	Green Peach Aphid
	Plant-feeding Mites,
	such as:
	Broad Mite, Twospotted
	Spider Mite
	Thrips, such as: Onion
	Thrips, Tobacco Thrips,
	Western Flower Thrips
Hops	Plant-feeding Mites,
	such as: Broad Mite,
	Lewis Mite, Twospotted
	Spider Mite
Tobacco	Aphids, such as:
	Green Peach Aphid
	Thrips, such as: Tobacco Thrips

#### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**Pesticide Storage:** Store unopened container at room temperature. Do not store product in an open/unsealed container. Discard any remaining product after use. Do not allow product to freeze.

**Pesticide Disposal:** Discard any remaining product after use on site, or send to a waste disposal facility or pesticide disposal program.

**Container Handling:** [For containers less than or equal to 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsatefor later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration.

[For containers greater than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten enclosures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration.

#### TERMS AND CONDITIONS OF USE

If the terms of the following WARRANTY DISCLAIMER, INHERENT RISKS OF USE, and LIMITATION OF REMEDIES are not acceptable, return the unopened package at once to Vestaron Corporation. Otherwise, useof the product will constitute acceptance of the terms under WARRANTY DISCLAIMER, INHERENT RISKS OFUSE and LIMITATION OF REMEDIES.

#### WARRANTY DISCLAIMER

TO THE EXTENT PERMITTED BY APPLICABLE LAW, VESTARON CORPORATION MAKES NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE CONCERNING USE OF THEPRODUCT

#### INHERENT RISKS OF USE

It is impossible to eliminate all risks associated with use of the product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use, storage or product handling not in accordance with the accompanying label instructions, abnormal conditions, presence of other materials, or other factors, all of which are beyond the control of Vestaron Corporation. All such risks shall be assumed by the user.

#### LIMITATION OF REMEDIES

To the extent permitted by applicable law, the exclusive remedy for losses or damages resulting from the product (including claims based on contract, negligence, strict liability, or other legal theories) shall be limited to replacement of the amount of product used. To the extent permitted by applicable law, Vestaron Corporation disclaims any liability for incidental, consequential, exemplary, special or indirect damages resulting from the use, storage or handling of the product.

### The terms of the WARRANTY DISCLAIMER, INHERENT RISKS OF USE, and LIMITATION OF

REMEDIES cannot be varied by any written or verbal statements or agreements. No employee or other agent of Vestaron Corporation is authorized to vary or exceed the terms of the WARRANTY DISCLAIMER, INHERENT RISKS OF USE, and LIMITATION OF REMEDIES in any manner. The terms may be varied only by agreement in writing signed by a duly authorized representative of Vestaron Corporation.

EPA Approval: xx/xx/xxxx

### Sublabel B: Greenhouse and Field Use in Tank Mixes with Bt

GROUP 32

INSECTICIDE

## **VST-006340 LC**

### **Biological Insecticide**

Active Ingredient:	
GS-omega/kappa-Hxtx-Hv1a*	2.0%
Other Ingredients	98.0%
Total	100.0%

Contains 0.17 lb active ingredient per gallon \*CAS No. 2307677-15-0

## KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See Inside Booklet for Additional Precautionary Statements and Directions for Use

	FIRST AID
lf in eyes	• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.
	• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
	Call a poison control center or doctor for treatment advice.
f on skin or clothing	• Take off contaminated clothing.
	• Rinse skin immediately with plenty of water for 15 – 20 minutes.
	Call a poison control center or doctor for treatment advice.
	HOTLINE NUMBER
	tainer or label with you when calling a poison control center or doctor, or going for treatment. You

may also contact 1-800-535-5053 for emergency medical treatment information and chemical emergency assistance.

EPA Reg. No. 88847-6 Net Contents:\_\_\_\_\_[Gal] [Liters] Made in USA EPA Est. No.: XXXXX-XX-XXX Lot No: XXXX

Manufactured for: Vestaron Corporation 600 Park Offices Drive, Suite 117 PO Box 13137 Research Triangle Park, NC 27709

#### PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals -CAUTION. Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Wear protective eyewear and waterproof gloves. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

#### Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- waterproof gloves
- shoes plus socks
- protective eyewear

Follow the manufacturer's instructions for cleaning / maintaining PPE. If no instructions are available, use detergent and hot water for washables. Keep and wash PPE separately from other laundry.

#### USER SAFETY RECOMMENDATIONS Users Should:

Remove clothing/PPE immediately if pesticide get inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Environmental Hazards:** For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

#### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and Restricted-Entry Interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. Do not enter or allow worker entry into treated areas during the Restricted Entry Interval (REI) of 4 hours unless wearing the appropriate personal protective equipment.

Do not enter or allow workers to enter the treated greenhouse or enclosed space until the ventilation requirements in 40 CFR 170.405(b)(3) have been met and the Restricted Entry Interval (REI) of 4 hours has expired. Until then, only handlers wearing the appropriate personal protective equipment can enter the greenhouse or enclosed space.

PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water) is:

- coveralls
- waterproof gloves
- shoes plus socks
- protective eyewear

#### **PRODUCT INFORMATION**

VST-006340 LC is a biological insecticide that contains the peptide active ingredient GS-omega/kappa-Hxtx-Hv1a. It is for use on ornamental plants and edible crops. To be effective against the labeled lepidopteran and coleopteran pests, VST-006340 LC must be tank mixed with a low label rate of *Bacillus thuringiensis* (Bt) products or another product that improves the bioavailability of the active ingredient to the site of activity. When ingested at labeled rates along with Bt, VST-006340 LC functions as a central nervous system inhibitor. VST-006340 LC is mixed with water and applied as a foliar spray with ground or aerial equipment equipped for conventional insecticide spraying.

VST-006340 LC tank mixes with Bt products can be used in both field and greenhouse.

VST-006340 LC tank mixes with Bt products can be applied by ground or aerial application in field and orchard crops.

#### **USE INSTRUCTIONS**

In combination with Bt, the active ingredient in VST-006340 LC largely acts through ingestion. VST-006340 LC has no systemic activity, therefore thorough coverage of infested plant parts is necessary for best performance. For some crops, directed drop nozzles by a ground sprayer are required. VST-006340 LC in combination with Bt is only effective on the larval stages of the listed lepidopteran pests. Younger larvae or earlier instars should be considered more susceptible.

The application rate for all listed crops and targets is 1-2 pints per acre. Repeat applications at 3-10-day intervals (or at intervals necessary to maintain control) depending upon plant growth rate, pest activity and other factors. Under heavy pest pressure conditions, shorten the spray

interval, use a higher rate, and/or increase spray volume to improve spray coverage. Do not spray to run off.

VST-006340 LC may be applied up to and including the day of harvest (Pre-harvest interval = 0 days).

Non-ionic surfactant (0.125% v/v) is recommended to achieve uniform plant coverage on plants that are difficult to wet, closed canopy or dense foliage. Use a spreader/sticker or an adjuvant that has been approved for the targeted crop use to enhance the adhesion of VST-006340 LC to the crop.

VST-006340 LC has been evaluated for phytotoxicity on a variety of edible and non-edible crops under various normal growing conditions. It is not feasible, however, to test all crop varieties in all mixtures and combinations. Therefore, prior to treating the entire crop, test a small portion of the crop for sensitivity.

#### **Mixing Directions:**

Do not add VST-006340 LC to the mix tank before introducing the desired amount of water. Add water to the mix tank. Start the mechanical or hydraulic agitation to provide moderate circulation before adding VST-006340 LC. Add the desired volume of VST-006340 LC to the mix tank and continue circulation. **Maintain circulation while loading and spraying.** Do not store tank mixes overnight.

#### Tank Mixing and compatibility:

Do not combine VST-006340 LC in the spray tank with other pesticides, surfactants, adjuvants or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective, and non-injurious under your use conditions. Follow the most restrictive of the labeling limitations and precautions of all products used in mixtures.

To ensure compatibility of tank-mix combinations, evaluate prior to use. Use a jar test to determine the physical compatibility of this product with other products. Add the proportionate amounts of the products to one quart of water with agitation. Add dry formulations first, then flowables, then emulsifiable concentrates. After thoroughly mixing, let this mixture stand for 5 minutes. If the combination remains mixed or can be readily remixed, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

When a surfactant is used, add it to the diluted spray solution last. Use the recommended dosage advised in the respective surfactant label to the diluted VST-006340 LC spray solution and mix thoroughly by agitation to prepare the spray solution for application.

#### Spray Volume:

Apply VST-006340 LC tank mixes in ground and aerial equipment with quantities of water sufficient to provide thorough coverage of infested plant parts. The amount of water needed per acre will depend upon crop species, growth stage, weather, application equipment and local experience. In field crops, use a minimum of 20 gallons per acre for ground applications and a minimum of 5 gallons per acre for aerial application. In mature orchard crops, use a minimum of 50 gallons per acre for ground and 10 gallons per acre for aerial application. Do not spray when wind speed favors drift beyond the area intended for use. Avoiding spray drift is the responsibility of the applicator.

#### **Use Restrictions:**

CHEMIGATION: Do not apply this product through any type of irrigation, except in cranberry for which application by sprinkler system is allowed.

For both indoor and outdoor uses, do not make more than 5 applications of VST-006340 LC per season or crop cycle, up to a maximum of 10 gallons per acre.

#### Integrated Pest Management (IPM):

VST-006340 LC is an important tool for sound pest management whenever pesticide use is necessary. Because the active ingredient has a novel mode of action, VST-006340 LC provides a new control method for the labeled pests. Based on sound scouting practices, use VST-006340 LC preventively to avoid infestations, as a spot spray to suppress localized infestations, or as a blanket spray to prevent outbreaks. Applying VST-006340 LC in rotation with other insecticides will reduce inputs of conventional insecticides and may also delay development of pesticide resistance. Based on a variety of evaluations, VST-006340 LC is not disruptive to the benefits of biological control agents or other non-target species. It is not feasible, however, to test all species of beneficials in all situations. Therefore, consult with a pest control advisor, extension agent or the manufacturer before treating an entire crop where beneficial insects serve as part of an IPM program. Consult local agricultural authorities for IPM strategies that are specific to your crop and location.

#### **Resistance Management:**

VST-006340 LC contains the biological peptide GSomega/kappa-Hxtx-Hv1a, which has a novel mode of action. It is classified as a Group 32 Insecticide and is not known to be cross-resistant to any other class of insecticide. Repeated use of any mode of action, however, has the potential for pests to develop resistance. To delay development of insecticide resistance, the following practices are recommended:

- Carefully follow the specific guidelines within the use directions.
- Avoid using the same active ingredient or mode of action on consecutive generations of insects. Multiple applications to reduce a single generation, however, are acceptable. Treat the next generation with a different mode of action.
- Avoid using less than labeled rates of any insecticide when applied alone.
- Target the insect in early development to achieve the greatest benefit from the insecticide.
- Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

#### **AERIAL DRIFT REDUCTION ADVISORY INFORMATION**

#### General:

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. Where states have more stringent regulations, they should be observed. Note: This section is advisory in nature and does not supersede the mandatory label requirements.

#### **Boom Width:**

For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3-10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or crop canopy.

#### **Application Height:**

Do not make aerial application at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### Swath Adjustment:

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

#### Wind:

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### **Temperature Inversions:**

Do not apply during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

#### Sensitive Areas:

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas,bodies of water, known habitat for threatened or endangered species, non- target crops) is minimal (e.g., when wind is blowing away from the sensitive areas). Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.

#### CHEMIGATION

This product may only be applied via chemigation in cranberry, through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set or hand move. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water. If you have questions about calibration, you should seek advice from State Extension Service specialists and equipment manufacturers.

#### **APPLICATION RATES AND VOLUMES**

For all listed crops and pests, apply 1-2 pints of VST-006340 LC per acre. Best performance depends on thorough coverage. In field crops use a minimum of 20 gallons for ground applications and 5 gallons for aerial applications. In mature orchard crops, use a minimum of 50 gallons per acre for ground and 10 gallons per acre for aerial applications. Do not spray to runoff.

#### PESTS CONTROLLED BY VST-006340 LC IN A TANK MIX WITH Bt

#### **Colorado Potato Beetle\***

\*Apply in a tank mix with the low labeled rate of a beetle active Bt, such as Bt ssp. tenebrionis

#### Lepidopteran Larvae (caterpillars, loopers, "worms")\*, such as:

\*Apply in a tank mix with the low labeled rate of a lepidopteran active Bt, such as Bt ssp. kurstaki

Alfalfa CaterpillarCutworms, such as:Amorbia spp.ArmywormsArmywormsCitrus, Cranberry, Roughskinned, Azalea CaterpillarBagwormsVariegatedBanana MothDiamondback Moth BollwormsBollwormsEastern Tent CaterpillarBrowntail MothEuropean Grapevine MothBuck MothMothBudworms, such as:European Pepper Moth Blackheaded, Jack Pine,Browntail MothForest Tent CaterpillarBrowntail MothEuropean Pepper MothBlackheaded, Blackheaded, Jack Pine,Fruitworms, such as: Cherry, Cranberry, California OakwormCalifornia OakwormGreen, Tomato Grape Berry MothCase Bearers, such as:Grape Berry Moth Grapeleaf SkeletonizerChainspotted Geometer Cornborers, such as:Green Cloverworm Green CloverwormCodling MothGreenstriped Mapleworm Gromborers, such as:Cornborers, such as:Gypsy Moth Headworms SouthwesternCorn EarwormHeliothis spp.Coton BollwormHickory Shuckworm Hornworms	
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### USE VST-006340 LC IN A TANK MIX WITH Bt ON THE FOLLOWING CROPS

Crops

- Vegetables: Vegetable, Root and Tuber (Group 1), such as: Beet, Carrot, Horseradish, Potato, Radish, Sugar Beet, Sweet Potato, Turnip, Turnip Greens
- Vegetable, Bulb (Group 3), such as: Garlic, Leek, Onion, Shallot
- Vegetable, Leafy Except Brassica (Group 4), such as: Celery, Endive, Lettuce, Parsley, Spinach
- Vegetable, Brassica Leafy (Group 5), such as: Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Collards, Kohlrabi
- Vegetable, Legume (Group 6), such as: Bean, Lentil, Pea, Soybean
- Vegetable, Fruiting (Group 8), such as: Eggplant, Pepper, Tomato
- Vegetable, Cucurbit (Group 9), such as: Cucumber, Melon, Squash, Watermelon
- **Other Vegetables,** such as: Artichoke, Asparagus, Malagna, Watercress

Field Crops, such as: Alfalfa (Hay Seed), Canola, Corn (Field, Sweet, Popcorn), Cotton, Forage Crops, Hay, Hemp, Hops, Jojoba,Peanut, Rapeseed, Rice, Safflower, Small Grains, Sorghum, Sunflower, Tobacco

- Herbs, Mints (Group 25), such as: Basil, Oregano, Peppermint, Thyme
- Spices (Group 26), such as: Dill, Fennel, Black Pepper

#### Fruits, Nuts

- Small Fruits and Berries (Group 13), such as: Blackberry, Blueberry, Cranberry, Currant, Grape, Raspberry, Strawberry
- **Pome Fruits (Group 11),** such as: Apple. Pear. Quince
- Stone Fruits (Group 12), such as:
- Apricot, Cherry, Nectarine, Peach, Plum
- Citrus Fruits (Group 10), such as: Grapefruit, Lemon, Lime, Orange

Tree Nuts (Group 14-12), such as: Almond, Chestnut, Hazelnut/Filbert, Pecan, Pistachio, Walnut

Other Fruits, such as: Avocado, Banana, Kiwi, Persimmon, Pineapple, Pomegranate, Tropical Fruits

### Bedding Plants, Container Plants, Flowers, Ornamentals

Greenhouse Crops and Outdoor Nursery Crops,

such as: Brassicas, Flowers, Fruiting groups, Hemp, Herbs and Spices, Leafy Vegetables, Ornamental Plants, Tobacco, Vegetable Groups

Forest, Ornamentals, Ornamental Fruit, Shade Trees, Shrubs, Sugar Maple Trees, Nut and CitrusTrees

#### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**Pesticide Storage:** Store unopened container at room temperature. Do not store product in an open/unsealed container. Discard any remaining product after use. Do not allow product to freeze.

**Pesticide Disposal:** Discard any remaining product after use on site, or send to a waste disposal facility or pesticide disposal program.

**Container Handling:** [For containers less than or equal to 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip are drive the flow begins to drip. Fill the container the flow begins to drip. Fill the container the flow begins to drip. Fill the container the flow begins to application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration.

[For containers greater than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten enclosures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration.

#### TERMS AND CONDITIONS OF USE

If the terms of the following WARRANTY DISCLAIMER, INHERENT RISKS OF USE, and LIMITATION OF REMEDIES are not acceptable, return the unopened package at once to Vestaron Corporation. Otherwise, use of the product will constitute acceptance of the terms under WARRANTY DISCLAIMER, INHERENT RISKS OFUSE and LIMITATION OF REMEDIES.

#### WARRANTY DISCLAIMER

TO THE EXTENT PERMITTED BY APPLICABLE LAW, VESTARON CORPORATION MAKES NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE CONCERNING USE OF THEPRODUCT.

#### INHERENT RISKS OF USE

It is impossible to eliminate all risks associated with use ofthe product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use, storage or product handling not in accordance with the accompanying label instructions, abnormal conditions, presence of other materials, or otherfactors, all of which are beyond the control of Vestaron Corporation. All such risks shall be assumed by the user.

#### LIMITATION OF REMEDIES

To the extent permitted by applicable law, the exclusive remedy for losses or damages resulting from the product (including claims based on contract, negligence, strict liability, or other legal theories) shall be limited to replacement of the amount of product used. To the extent permitted by applicable law, Vestaron Corporation disclaims any liability for incidental, consequential, exemplary, special or indirect damages resulting from the use, storage or handling of the product.

The terms of the WARRANTY DISCLAIMER, INHERENT RISKS OF USE, and LIMITATION OF REMEDIES cannot be varied by any written or verbal statements or agreements. No employee or other agent of Vestaron Corporation is authorized to vary or exceed the terms of the WARRANTY DISCLAIMER, INHERENT RISKS OF USE, and LIMITATION OF REMEDIES in any manner. The terms may be varied only by agreement in writing signed by a duly

authorized representative of Vestaron Corporation.

EPA Approval: xx/xx/xxxx

GROUP 32

INSECTICIDE

## **VST-006340 LC**

**Biological Insecticide** 

Active Ingredient:	
GS-omega/kappa-Hxtx-Hv1a*	2.0%
Other Ingredients	
Total	100.0%

Contains 0.17 lb active ingredient per gallon \*CAS No. 2307677-15-0

## KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See Inside Booklet for Additional Precautionary Statements and Directions for Use

	FIRST AID
lf in eyes	• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.
	• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
	Call a poison control center or doctor for treatment advice.
lf on skin or clothing	Take off contaminated clothing.
	• Rinse skin immediately with plenty of water for 15 – 20 minutes.
	Call a poison control center or doctor for treatment advice.
	HOTLINE NUMBER
	tainer or label with you when calling a poison control center or doctor, or going for treatment. You

may also contact 1-800-535-5053 for emergency medical treatment information and chemical emergency assistance.

EPA Reg. No. 88847-6 Net Contents:\_\_\_\_\_[Gal] [Liters] Made in USA EPA Est. No.: XXXXX-XX-XXX Lot No: XXXX

Manufactured for: Vestaron Corporation 600 Park Offices Drive, Suite 117 PO Box 13137 Research Triangle Park, NC 27709

#### PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals -CAUTION. Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing. Wear protective eyewear and waterproof gloves. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

#### Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- waterproof gloves
- shoes plus socks
- protective eyewear

Follow the manufacturer's instructions for cleaning / maintaining PPE. If no instructions are available, use detergent and hot water for washables. Keep and wash PPE separately from other laundry.

#### USER SAFETY RECOMMENDATIONS Users Should:

Remove clothing/PPE immediately if pesticide get inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Environmental Hazards:** For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

#### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and Restricted-Entry Interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. Do not enter or allow worker entry into treated areas during the Restricted Entry Interval (REI) of 4 hours unless wearing the appropriate personal protective equipment.

Do not enter or allow workers to enter the treated greenhouse or enclosed space until the ventilation requirements in 40 CFR 170.405(b)(3) have been met and the Restricted Entry Interval (REI) of 4 hours has expired. Until then, only handlers wearing the appropriate personal protective equipment can enter the greenhouse or enclosed space.

PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water) is:

- coveralls
- waterproof gloves
- shoes plus socks
- protective eyewear

#### **PRODUCT INFORMATION**

VST-006340 LC is a biological insecticide that contains the peptide active ingredient GS-omega/kappa-Hxtx-Hv1a. It is for use on field crops. To be effective against the labeled pests, VST-006340 LC must be tank mixed with a low label rate of *Bacillus thuringiensis* (Bt) products or another product that improves the bioavailability of the active ingredient to the site of activity. For Bt transgenic crops, the addition of Bt in the tank mix may not be necessary. When ingested at labeled rates along with Bt, VST-006340 LC functions as a central nervous system inhibitor. VST-006340 LC is mixed with water and applied as a foliar spray with ground or aerial equipment equipped for conventional insecticide spraying.

VST-006340 LC tank mixes with Bt products can be applied by ground or aerial application in field crops.

#### **USE INSTRUCTIONS**

In combination with Bt, the active ingredient in VST-006340 LC largely acts through ingestion. VST-006340 LC has no systemic activity, therefore thorough coverage of infested plant parts is necessary for best performance. For some crops, directed drop nozzles by a ground sprayer are required. VST-006340 LC in combination with Bt is only effective on the larval stages of the listed pests. Younger larvae or earlier instars should be considered more susceptible.

The application rate for all listed crops and targets is 1-2 pints per acre. Repeat applications at 3-10-day intervals (or at intervals necessary to maintain control) depending upon plant growth rate, pest activity and other factors. Under heavy pest pressure conditions, shorten the spray

interval, use a higher rate, and/or increase spray volume to improve spray coverage. Do not spray to run off.

VST-006340 LC may be applied up to and including the day of harvest (Pre-harvest interval = 0 days).

Non-ionic surfactant (0.125% v/v) is recommended to achieve uniform plant coverage on plants that are difficult to wet, closed canopy or dense foliage. Use a spreader/sticker or an adjuvant that has been approved for the targeted crop use to enhance the adhesion of VST-006340 LC to the crop.

VST-006340 LC has been evaluated for phytotoxicity on a variety of edible and non-edible crops under various normal growing conditions. It is not feasible, however, to test all crop varieties in all mixtures and combinations. Therefore, prior to treating the entire crop, test a small portion of the crop for sensitivity.

#### **Mixing Directions:**

Do not add VST-006340 LC to the mix tank before introducing the desired amount of water. Add water to the mix tank. Start the mechanical or hydraulic agitation to provide moderate circulation before adding VST-006340 LC. Add the desired volume of VST-006340 LC to the mix tank and continue circulation. **Maintain circulation while loading and spraying.** Do not store tank mixes overnight.

#### Tank Mixing and compatibility:

Do not combine VST-006340 LC in the spray tank with other pesticides, surfactants, adjuvants or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective, and non-injurious under your use conditions. Follow the most restrictive of the labeling limitations and precautions of all products used in mixtures.

To ensure compatibility of tank-mix combinations, evaluate prior to use. Use a jar test to determine the physical compatibility of this product with other products. Add the proportionate amounts of the products to one quart of water with agitation. Add dry formulations first, then flowables, then emulsifiable concentrates. After thoroughly mixing, let this mixture stand for 5 minutes. If the combination remains mixed or can be readily remixed, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

When a surfactant is used, add it to the diluted spray solution last. Use the recommended dosage advised in the respective surfactant label to the diluted VST-006340 LC spray solution and mix thoroughly by agitation to prepare the spray solution for application.

#### Spray Volume:

Apply VST-006340 LC tank mixes in ground and aerial equipment with quantities of water sufficient to provide thorough coverage of infested plant parts. The amount of water needed per acre will depend upon crop species, growth stage, weather, application equipment and local experience. In field crops, use a minimum of 20 gallons per acre for ground applications and a minimum of 5 gallons per acre for aerial application. Do not spray when wind speed favors drift beyond the area intended for use. Avoiding spray drift is the responsibility of the applicator.

#### **Use Restrictions:**

CHEMIGATION: Do not apply this product through any type of irrigation.

Do not make more than 5 applications of VST-006340 LC per season or crop cycle, up to a maximum of 10 pints per acre.

#### Integrated Pest Management (IPM):

VST-006340 LC is an important tool for sound pest management whenever pesticide use is necessary. Because the active ingredient has a novel mode of action, VST-006340 LC provides a new control method for the labeled pests. Based on sound scouting practices, use VST-006340 LC preventively to avoid infestations, as a spot spray to suppress localized infestations, or as a blanket spray to prevent outbreaks. Applying VST-006340 LC in rotation with other insecticides will reduce inputs of conventional insecticides and may also delay development of pesticide resistance. Based on a variety of evaluations, VST-006340 LC is not disruptive to the benefits of biological control agents or other non-target species. It is not feasible, however, to test all species of beneficials in all situations. Therefore, consult with a pest control advisor, extension agent or the manufacturer before treating an entire crop where beneficial insects serve as part of an IPM program. Consult local agricultural authorities for IPM strategies that are specific to your crop and location.

#### **Resistance Management:**

VST-006340 LC contains the biological peptide GSomega/kappa-Hxtx-Hv1a, which has a novel mode of action. It is classified as a Group 32 Insecticide and is not known to be cross-resistant to any other class of insecticide. Repeated use of any mode of action, however, has the potential for pests to develop resistance. To delay development of insecticide resistance, the following practices are recommended:

- Carefully follow the specific guidelines within the use directions.
- Avoid using the same active ingredient or mode of action on consecutive generations of insects. Multiple applications to reduce a single generation, however, are acceptable. Treat the next generation with a different mode of action.
- Avoid using less than labeled rates of any insecticide when applied alone.
- Target the insect in early development to achieve the greatest benefit from the insecticide.
- Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

#### **AERIAL DRIFT REDUCTION ADVISORY INFORMATION**

#### General:

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. Where states have more stringent regulations, they should be observed. Note: This section is advisory in nature and does not supersede the mandatory label requirements.

#### Boom Width:

For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3-10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or crop canopy.

#### **Application Height:**

Do not make aerial application at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### Swath Adjustment:

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

#### Wind:

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### **Temperature Inversions:**

Do not apply during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

#### Sensitive Areas:

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas,bodies of water, known habitat for threatened or endangered species, non- target crops) is minimal (e.g., when wind is blowing away from the sensitive areas). Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.

#### APPLICATION RATES AND VOLUMES

For all listed crops and pests, apply 1-2 pints of VST-006340 LC per acre. Best performance depends on thorough coverage. In field crops use a minimum of 20 gallons for ground applications and 5 gallons for aerial applications. Do not spray to runoff.

#### PESTS CONTROLLED BY VST-006340 LC IN A TANK MIX WITH Bt

#### Colorado Potato Beetle\*

\*Apply in a tank mix with the low labeled rate of a beetle active Bt, such as Bt ssp. *tenebrionis* 

Lepidopteran Larvae (caterpillars, loopers, "worms")\*, such as: \*Apply in a tank mix with the low labeled rate of a lepidopteran active Bt, such as Bt ssp. *kurstaki*, or *aizawai* 

Alfalfa Caterpillar	Green Cloverworm
Armyworms, such as	Headworms, such as
Beet, Fall, Western	Sorghum
Yellowstriped	<i>Helicoverpa</i> spp.
Bollworms	<i>Heliothis</i> spp.
Budworms, such as:	Hornworms
Tobacco	Loopers, such as:
Cornborers, such as:	Alfalfa, Cabbage,
European,	Omnivorous, Soybean
Southwestern	Omnivorous Leaftier
Corn Earworm	Saltmarsh Caterpillar
Cotton Bollworm	Skippers, such as:
Cotton Leaf Perforator	European
Cotton Leafworm	Soybean Podworm
Cutworms, such as	Sunflower Moth
Roughskinned,	Tomato Pinworm
Spotted,	Velvetbean Caterpillar
Variegated	Webworms
Fruitworms, such as:	
Tomato	

#### USE VST-006340 LC IN A TANK MIX WITH Bt ON THE **FOLLOWING CROPS**

Crops

Row Crops:
Vegetable, Root and Tuber (Group 1), such as:
Potato, Sugar Beet
Vegetable, Legume (Group 6), such as: Soybean
Vegetable, Fruiting (Group 8), such as: Tomato
Cereal Grains, such as: Corn (Field, Popcorn, Sweet),
Rice, Small Grains, Sorghum
Oilseed (Group 20), such as: Jojoba, Rapeseed (canola
varieties), Safflower, Sunflower
Grass and Nongrass animal feeds, such as: Alfalfa and
Fescue

Cotton Hemp Peanut Tobacco

#### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Store unopened container at room temperature. Do not store product in an open/unsealed container. Discard any remaining product after use. Do not allow product to freeze.

**Pesticide Disposal:** Discard any remaining product after use on site, or send to a waste disposal facility or pesticide disposal program.

**Container Handling:** [For containers less than or equal to 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container <sup>1</sup>/<sub>4</sub> full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration.

[For containers greater than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$ full with water. Replace and tighten enclosures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration.

#### TERMS AND CONDITIONS OF USE

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EPA Approval: xx/xx/xxxx

## **Alternate Brand Names:**

Spear<sup>®</sup>-T Liquid Concentrate Spear<sup>®</sup>-Lep Spear<sup>®</sup>-RC VST-006340 SL