



OPEN

GROUP 32 INSECTICIDE

Biological Insecticide/Miticide**Active Ingredient:**

GS-omega/kappa-Hxtx-Hv1a 2.0%

Other Ingredients: 98.0%**Total:** 100.0%

Contains 0.17 lb active ingredient per gallon.

**KEEP OUT OF REACH OF CHILDREN
CAUTION/PRECAUTION**

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 Storage and Disposal.

FIRST AID

If in eyes	<ul style="list-style-type: none">• 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.
If on skin or clothing	<ul style="list-style-type: none">• 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 (and +1-352-323-3500 for International) for emergency medical treatment information and chemical emergency assistance.

Produced for:

Vestaron Corporation
600 Park Offices Drive, Suite 117
Research Triangle Park, NC 27709

EPA Reg. No.: 88847-6**EPA Est. No.: Printed on Container**

Made in USA

NET CONTENTS: 1 GALLON

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals - CAUTION. Causes moderate eye irritation. 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 gets 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

Spear®-T Liquid Concentrate 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. Spear®-T Liquid Concentrate is a contact insecticide that functions primarily as a central nervous system inhibitor of target pests infesting labeled crops. Spear®-T Liquid Concentrate is mixed with water and applied as a foliar spray with ground equipment equipped with fine nozzles to minimize droplet size.

GENERAL USE INSTRUCTIONS

The active ingredient in Spear®-T Liquid Concentrate largely acts through contact. Spear®-T Liquid Concentrate 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.

Spear®-T Liquid Concentrate is effective on immature and some adult stages of the listed insect and mite pests. Earlier or younger developmental stages should be considered more susceptible. Spear®-T Liquid Concentrate is not effective on the egg stage. Careful scouting to detect infestations early is important for optimal results. Repeat applications at 3-10-day intervals (or at intervals necessary to maintain control) depending upon plant growth rate, pest activity and other factors.

Spear®-T Liquid Concentrate may be applied up to and including the day of harvest (Pre-harvest interval = 0 days).

Spear®-T Liquid Concentrate 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 Spear®-T Liquid Concentrate 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 Spear®-T Liquid Concentrate. Add the desired volume of Spear®-T Liquid Concentrate to the tank and continue circulation. **Maintain circulation while loading and spraying.** Do not mix more Spear®-T Liquid Concentrate than can be used in 24 hours.

Tank mixing and compatibility:

Do not combine Spear®-T Liquid Concentrate 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 Spear®-T Liquid Concentrate spray solution and mix thoroughly by agitation to prepare the spray solution for application.

Use Restrictions:

Do not apply Spear®-T Liquid Concentrate through any type of irrigation system.

For outdoor field use, do not apply more than 10 gallons per acre per year.

Integrated Pest Management (IPM):

Spear®-T Liquid Concentrate is an important tool for sound pest management whenever pesticide use is necessary. Because the active ingredient has a novel mode of action, Spear®-T Liquid Concentrate provides a new control method for the labeled pests. It effectively targets immature and some adult life stages. Based on sound scouting practices, use Spear®-T Liquid Concentrate preventively to avoid infestations, as a spot spray to suppress localized infestations, or as a blanket spray to prevent outbreaks. Applying Spear®-T Liquid Concentrate in rotation with other insecticides as a part of a resistance management program will reduce inputs of conventional insecticides and also delay development of pesticide resistance. Based on a variety of evaluations, Spear®-T Liquid Concentrate 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:

GROUP	32	INSECTICIDE
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Spear®-T Liquid Concentrate contains the biological peptide GS-omega/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 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.

APPLICATION INSTRUCTIONS

GREENHOUSE AND NURSERY USE DIRECTIONS

Spear®-T Liquid Concentrate may be used in greenhouses (including high tunnels, lath and shade houses, interior scapes and hoop houses) and nurseries. Make applications with high pressure, low-volume or ultra-low-volume spraying and fogging equipment. Spear®-T Liquid Concentrate 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 2-3 gallons of Spear®-T Liquid Concentrate with water to a total volume of 100 gallons to prepare a 2-3% 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-low-volume equipment, apply 1-3 gallons of Spear®-T Liquid Concentrate 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.

FIELD USE DIRECTIONS FOR FRUITS AND VEGETABLES

Use high pressure for application of the spray solution. Apply 1-3 gallons of Spear®-T Liquid Concentrate per acre. Better coverage and penetration of crop canopy is usually achieved 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 to improve coverage may increase performance. Repeat applications at 3-10-day intervals depending upon plant growth rate, pest activity and other factors. Not for aerial application.

DIPPING OR IMMERSION TREATMENTS

Spear®-T Liquid Concentrate 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 Spear®-T Liquid Concentrate with 3 gallons of water for a 25% product solution. If plant sensitivity is a concern, this concentration may be reduced to 1 gallon of Spear®-T Liquid Concentrate with 9 gallons of water for a 10% 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 Spear®-T Liquid Concentrate 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 Spear®-T Liquid Concentrate 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 Spear®-T Liquid Concentrate 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 SPEAR®-T LIQUID CONCENTRATE ON THE FOLLOWING CROPS: GREENHOUSE AND NURSERY USES

Crop	Insect/Mite Pest
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, such as: Basil, Chive, Cilantro, Dill, Mint, Parsley, Rosemary, Sage, Thyme Greenhouse Fruit Fruit, Citrus (Group 10), such as: Grapefruit, Lemon, Lime, Orange Fruit, Stone (Group 12), such as: Cherry, Nectarine, Peach, Plum, Prune Berry (Group 13), such as: Blackberry, Blueberry, Grape, Raspberry, Strawberry	Aphids, such as: Cotton/Melon Aphid Green Peach 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 Sweetpotato Whitefly

Crop	Insect/Mite Pest
Hemp and Tobacco	<p>Aphids, such as: Cotton/Melon Aphid Green Peach Aphid</p> <p>Plant-feeding Mites, such as: Broad Mite Twospotted Spider Mite</p> <p>Thrips, such as: Onion Thrips Tobacco Thrips Western Flower Thrips</p> <p>Whiteflies, such as: Greenhouse Whitefly Sweetpotato Whitefly</p>

FIELD USES

Crop	Insect/Mite Pest
<p>Field Vegetables:</p> <p>Vegetables, Root and Tuber (Group 1), such as: Beet, Carrot, Potato, Radish, Sugarbeet</p> <p>Vegetable, Bulb (Group 3), such as: Garlic, Leek, Onion (Green and Bulb)</p> <p>Vegetable, Leafy Except Brassica (Group 4), such as: Celery, Endive, Lettuce, Parsley, Spinach</p> <p>Vegetable, Brassica Leafy (Group 5), such as: Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Chinese Cabbage, Collards, Kale, Kohlrabi, Mustard Greens</p> <p>Vegetable, Legume (Group 6), such as: Bean, Lentil, Pea, Soybean</p> <p>Vegetable, Fruiting (Group 8), such as: Eggplant, Pepper, Tomato</p> <p>Vegetable, Cucurbit (Group 9), such as: Cucumber, Melon, Squash, Watermelon</p>	<p>Plant-feeding Mites, such as: Broad Mite Lewis Mite Twospotted Spider Mite</p> <p>Psyllids, such as: Potato Psyllid</p> <p>Thrips, such as: Onion Thrips Tobacco Thrips Western Flower Thrips</p>
<p>Field Fruit:</p> <p>Fruit, Citrus (Group 10), such as: Grapefruit, Lemon, Lime, Orange</p> <p>Fruit, Pome (Group 11), such as: Pear</p> <p>Fruit, Stone (Group 12), such as: Cherry, Nectarine, Peach, Plum, Prune</p> <p>Berry (Group 13), such as: Blackberry, Blueberry, Grape, Raspberry, Strawberry</p>	<p>Plant-feeding Mites, such as: Broad Mite Citrus Rust Mite Twospotted Spider Mite</p> <p>Psyllids, such as: Asian Citrus Psyllid Pear Psylla</p> <p>Spotted-wing Drosophila</p>
Hemp	<p>Aphids, such as: Cotton/Melon Aphids Green Peach Aphid</p> <p>Plant-feeding Mites, such as: Broad Mite Twospotted Spider Mite</p> <p>Thrips, such as: Onion Thrips Tobacco Thrips Western Flower Thrips</p>

Crop	Insect/Mite Pest
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 allow product to freeze. Do not store product in an open/unsealed container. Discard any remaining product after use.

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

Container Handling:

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 1/4 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.

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 OF USE 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 THE PRODUCT.

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.

Spear® is a registered trademark of Vestaron Corporation.

Vestaron name and logo are registered trademarks of Vestaron Corporation.

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