



Miticide/Insecticide

For control of leafminers and mites and suppression of aphids, whiteflies, and thrips on ornamental plants

Recommended for Agricultural/Commercial Use

<i>Active Ingredient:</i>	
Abamectin (CAS No. 65195-56-4 and 65195-55-3)	2.0%*
<i>Other Ingredients:</i>	
	98.0%
<i>Total:</i>	100.0%

*1 gal. contains 0.15 lb. abamectin.

KEEP OUT OF REACH OF CHILDREN. WARNING/AVISO

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 additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-896
EPA Est. 39578-TX-001
Product of China
Formulated in the USA
SCP 896A-L6D 1211

1 gallon
Net Contents



FIRST AID	
If swallowed	<ul style="list-style-type: none"> • Call poison control center or doctor immediately for treatment advice. • Do not give any liquid to the person. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
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.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
<p align="center">NOTE TO PHYSICIAN</p> <p>Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Toxicity following accidental ingestion of this product can be minimized by early administration of chemical adsorbents (e.g., activated charcoal). If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parenteral fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements.</p> <p>In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since abamectin is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic abamectin exposure.</p>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
<p align="center">HOT LINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident), Call 1-800-888-8372.</p>	

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals
WARNING/AVISO

May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear such as goggles, face shield or safety glasses. Harmful if inhaled or absorbed through the skin. Avoid contact with skin. Prolonged or frequently repeated exposure may cause allergic skin reactions in some individuals. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

PRECAUTIONARY STATEMENTS (continued)

Personal Protective Equipment

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category B on an EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves – EPA chemical-resistance category B (e.g., barrier laminate or butyl rubber ≥14 mils)
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure.
- Chemical-resistant apron when cleaning equipment, mixing, or loading.
- For shadehouse and greenhouse uses, applicators and other handlers must wear a dust/mist-filtering NIOSH-approved respirator with any R, P, or HE filter.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/ maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Environmental Hazards

This pesticide is toxic to fish and wildlife. Do not apply directly to water, 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 wash water or rinsate.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Physical or Chemical Hazards

Do not use or store near heat or open flame.

Attention: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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 12 hours.

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 over short-sleeved shirt and short pants
- Chemical-resistant gloves – EPA chemical-resistance category B (e.g., barrier laminate or butyl rubber ≥14 mils)
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR INSECT CONTROL, AND/OR ILLEGAL RESIDUES.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not re-enter treated areas until sprays have dried.

GENERAL INFORMATION

Avid 0.15EC is an emulsifiable concentrate containing 0.15 lb. abamectin/gal. which, when mixed with water according to the directions for use, will control leafminers and mites and suppress whiteflies, thrips, and aphids on ornamentals.

Mix with sufficient water and apply as a foliar spray to obtain uniform coverage. For mites, apply when mites first appear and repeat as necessary to maintain control. For leafminers, apply as needed and repeat at 7-day intervals or as necessary to maintain control.

For suppression of aphids, thrips, and whiteflies, apply when young, immature stages of these pests are first observed and repeat every 7 days for 2 or 3 weeks. After which time, rotate to other products that have different modes of action than Avid 0.15 EC for at least 2-3 weeks. Refer to the **Resistance Management** section for additional comments on rotation. Aphids, thrips, and whiteflies are killed by direct contact with the Avid 0.15 EC spray.

Residual control of pests may be enhanced with the addition of a horticultural spray oil at 0.5 to 1.0% of the spray volume on field-grown woody ornamentals, landscape plants, and Christmas trees. Repeat application as necessary, but no sooner than 7 days to maintain control. Some plants are sensitive to oils and so without prior experience the user should spray a small number of plants and observe plants for 2 weeks before spraying the remaining plants. Excessive cold or warm temperatures may increase the chance of plant damage following application with oils. Carefully read and follow directions on the oil label and do not exceed maximum rates listed on either label.

Resistance Management

Treatment may not be effective against these pests if Avid 0.15 EC-tolerant strains develop. Therefore, when applying Avid 0.15 EC to plants that are hosts of labeled pests with multiple generations per crop or year, resistance management strategies must be used. Such strategies may include, but are not limited to, rotation of products with different modes of action, avoid treatment of successive generations with the same product, use of labeled rates at specified spray intervals, non-chemical alternatives such as beneficial arthropods, rotation of susceptible to non-susceptible plants, and various cultural practices. For additional information on the implementation of these or other resistance management strategies, consult with your State Cooperative Extension Service.

To manage susceptibility in *Liriomyza* leafminer species, apply a maximum of three applications of Avid 0.15 EC and then rotate to Citation® for a maximum of three applications, before rotating back to Avid 0.15 EC or using another product. The rotation between these two products with different modes of action should be based on the generation time of *Liriomyza* species to avoid applying Avid 0.15 EC to successive generations.

Restrictions

Do not use Avid 0.15 EC for suppression of aphids, whiteflies, and thrips on roses, chrysanthemums, and gerbera. These ornamentals are primary hosts of mites and *Liriomyza* leafminers for which Avid 0.15 EC applications should be targeted. Additional applications of Avid 0.15 EC to suppress aphids, thrips, and whiteflies on these plants will increase the selection pressure on mites and *Liriomyza* leafminers, which may result in greater tolerance to Avid 0.15 EC among these pests.

Do not apply this product through any type of irrigation system.

Not for aerial application.

Do not use in citrus nurseries.

Avid 0.15 EC has been evaluated for phytotoxicity on a wide range of ornamental plants. However, since all combinations or sequences of pesticide sprays, including surfactants and adjuvants, have not been tested, it is recommended that a small area be sprayed first to make certain that no phytotoxicity occurs. Phytotoxicity has been observed following the use of Avid 0.15 EC on certain species of ferns (e.g., *Adiantum* spp.) and Shasta Daisy (*Leucanthemum* spp.). It is therefore recommended that Avid 0.15 EC not be used on ferns or Shasta Daisy.

CROP USE DIRECTIONS

Shadehouse, Greenhouse, Field-Grown Ornamentals, Foliage Plants, Christmas Trees, and Other Woody Ornamentals

Pests	fl. oz./ 100 gal.	Comments
Mites: ¹ European Red Mite Twospotted Spider Mite Carmine Spider Mite Southern Red Mite Spruce Spider Mite Tarsonemid Mites ³ : Cyclamen Broad Mites Eriophyid Mites: Rust Bud Mites	4	³ For tarsonemid mites, repeat applications to newly developing tissue may be necessary to maintain control.
<i>Liriomyza</i> Leafminers ²	8	Repeat at 7-day intervals or as necessary to maintain control.
Boxwood Leafminer	8	For control of mining larvae, make the application when adults are beginning to lay eggs in the new foliage.
Aphids, Thrips Whiteflies	8	For suppression of pest populations, young immatures must be contacted by the spray.

General Information Per Application: Do not apply less than 8 fl. oz. or more than 16 fl. oz./A. Use sufficient water to obtain uniform plant coverage. Refer to the **Resistance Management** section and the **Restrictions** section for additional information.

¹Apply, for example, in 200-400 gal. of water/A. In volumes of water below 200 gal., use a minimum of 8 fl. oz./A. If more than 400 gal. of water/A are required for good plant coverage, apply a maximum rate of 16 fl. oz./A. For example, if 650 gal. of water are required, use 2.5 fl. oz./100 gal.

²Apply, for example, in 100-200 gal. of water/A. In water volumes below 100 gal., use a minimum of 8 fl. oz./A. If more than 200 gal. of water per acre are required for good plant coverage, apply the maximum rate of 16 fl. oz./A. For example, if 400 gal. of water are required, use 4 fl. oz./100 gal.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container.

Pesticide Storage

Store in a tightly closed container in a cool, dry place.



Pesticide Disposal

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Handling

Non-refillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank. 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 mix tank or store rinsate for later use and 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, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes.

Avid®, Citation®, the ALLIANCE FRAME 
the SYNGENTA Logo and the PURPOSE ICON 
are Trademarks of a Syngenta Group Company

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For non-emergency (e.g., current product information), call
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:
Syngenta Crop Protection, LLC
P.O. Box 18300
Greensboro, North Carolina 27419-8300

SCP 896A-L6D 1211

GROUP 28 INSECTICIDE



Insecticide

**KEEP OUT OF REACH OF CHILDREN. /
MANTÉNGASE FUERA DEL ALCANCE DE LOS
NIÑOS.**

For control of insects on ornamental plants; ornamental bulb, corn and tuber crops; conifers; Christmas trees; and non-bearing fruit and nut trees grown in greenhouses and nurseries (including field- and container-grown plants grown outdoors and in shade houses, lath houses and other ornamental production structures), conifer nurseries, retail nurseries, residential and commercial landscapes, and interior plantscapes

Effective on both chewing and sucking pests
Systemic activity by foliar or soil application
Effective control of ornamental insect pests on trees and shrubs

Active Ingredient:

Cyantraniliprole*:

3-bromo-1-(3-chloro-2-pyridinyl)-N-[4-cyano-2-methyl-6-[(methylamino) carbonyl]phenyl]-1H-pyrazole-5-carboxamide: 18.66%

Other Ingredients: 81.34%

Total: 100.00%

Mainspring® GNL is a suspension concentrate (SC) formulation containing 1.67 pounds of cyantraniliprole per gallon.

*Cyantraniliprole belongs to the anthranilic diamide chemical class.

**KEEP OUT OF REACH OF CHILDREN. /
MANTÉNGASE FUERA DEL ALCANCE
DE LOS NIÑOS.**

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 additional precautionary statements and directions for use inside booklet. Vea más declaraciones de precaución e instrucciones del uso en folleto.

EPA Reg. No. 100-1543

EPA Est. No. 072344-MO-004

Formulated in USA

SCP 1543A-L1 1115

FIRST AID

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

HOT LINE NUMBER

For 24-Hour Medical Emergency Assistance
(Human or Animal)

or Chemical Emergency Assistance
(Spill, Leak, Fire or Accident),
Call

1-800-888-8372

Cuando llame a un centro de control de envenenamiento, a un médico, o intente obtener tratamiento, tenga a la mano el envase o la etiqueta del producto. Para más información sobre el tratamiento médico de emergencia, llame al

1-800-888-8372.

PRECAUTIONARY STATEMENTS

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks.

After the product has been diluted in accordance with label directions for use, shirt, pants, socks, and shoes are sufficient Personal Protective Equipment (PPE). Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables are available, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users Should: 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.

Equipo de Protección Personal (PPE)

Los aplicadores y otros manipuladores de pesticidas necesitan usar:

- Camisa de manga larga y pantalones largos.
- Zapatos y calcetines.

Después de diluir el pesticida de acuerdo a las instrucciones de uso en la etiqueta, es suficiente usar el equipo de protección como camisa de manga larga, pantalones, calcetines y zapatos. Siga las instrucciones del fabricante para la limpieza/mantenimiento del Equipo de Protección Personal. En el caso de no existir dichas instrucciones de limpieza para equipos de protección, utilice detergente y agua caliente. Mantenga y lave el Equipo de Protección Personal separadamente de otras prendas de vestir.

Recomendaciones de Seguridad para los Manipuladores de Pesticidas

Los Manipuladores Deben: Lávese minuciosamente con agua y jabón después de manipular los pesticidas, y antes de comer, beber, masticar chicle, usar tabaco o utilizar el sanitario. Quítese la ropa sucia y lávela antes de volverla a usar.

Environmental Hazards

Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. This pesticide is toxic to aquatic invertebrates. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are foraging the treatment area.

Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application.

Do not make ground applications within 25 feet of lakes, rivers, reservoirs, permanent streams, marshes, natural ponds, estuaries or coastal areas. Do not cultivate within 25 feet of the aquatic area to allow growth of a vegetative filter strip. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

Ground Water Advisory

This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

Physical or Chemical Hazards

DO NOT place product near or allow product to come into contact with strong oxidizing substances (such as potassium permanganate) since a hazardous chemical reaction may occur.

PROTECTION OF POLLINATORS



APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.



Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.

This product can kill bees and other insect pollinators.

Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

When Using This Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants around the application site.
- Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at:
<http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>.

Pesticide incidents (for example, bee kills) should immediately be reported to the state/tribal lead agency. For contact information for your state, go to: www.aapco.org/officials.html. Pesticide incidents should also be reported to the National Pesticide Information Center at: www.npic.orst.edu or directly to EPA at: beekill@epa.gov

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions, or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. 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.

For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

Read and understand the entire label before using this product. Mainspring GNL must be used in accordance with the directions of this label.

1. FOR FOOD CROPS AND COMMERCIALY GROWN OUTDOOR ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT WHICH ARE ATTRACTIVE TO POLLINATORS



Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless one of the following conditions is met:

- The application is made to the target site after sunset.
- The application is made to the target site when temperatures are below 55°F.
- The application is made in accordance with a government-initiated public health response.

- The application is made in accordance with an active state-administered apiary registry program where beekeepers are notified no less than 48 hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.
- The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify beekeepers no less than 48 hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

NON-AGRICULTURAL PRODUCTS:



Do not apply Mainspring GNL while bees are foraging. Do not apply Mainspring GNL to plants that are flowering. Only apply after all flower petals have fallen off.

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 (sod farms included), 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 the label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable).

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.

For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

For early entry into 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, wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Exception: If the product is drenched, soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated. No restricted-entry interval (REI) is required following soil-injected, soil-incorporated or soil drench application.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides, 40 CFR part 170. The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Professional applications to golf courses, residential, industrial and commercial lawns and landscapes, and sports fields are not within the scope of the Worker Protection Standard. Do not enter or allow others to enter the treated area until sprays have dried.

USE RESTRICTIONS AND PRECAUTIONS

- **For crops and plants grown outdoors:**
 - o Do not apply more than 32 fluid ounces of product per acre per year (equivalent to 0.4 lb of active ingredient per acre per year).
 - o Unless otherwise stated for a specific crop or plant, do not apply a total of more than 0.4 lb ai/A of cyantraniliprole-containing products per year. This is the total from all application methods (e.g., seed, soil, foliar).
- **DO NOT** allow chemigation water to run off or puddle following application.
- Avoid application to areas that are water logged or saturated or frozen, which will not allow penetration into the root zone of the plant.
- Keep people and pets away from treated area until treatment has dried.
- Wait a minimum of 7 days to retreat.
- **Nassau and Suffolk Counties, State of New York:** Mainspring GNL may only be applied for listed greenhouse and interior plantscape uses. **DO NOT** apply Mainspring GNL to any outdoor use site, including shade houses, lath houses or other non-enclosed ornamental production structures.

PRODUCT INFORMATION

Mainspring GNL is an insecticide that controls listed insect pests on ornamental plants; ornamental bulb, corm and tuber crops; conifers; Christmas trees; and non-bearing fruit and nut trees grown in greenhouses and nurseries (including field- and container-grown plants grown outdoors and in shade houses, lath houses and other ornamental production structures), conifer nurseries, retail nurseries, residential and commercial landscapes, and interior plantscapes.

Mainspring GNL may be applied to plants and grassy areas that are grown for aesthetic recreational or other property maintenance purposes or climatic modification in or around home lawns, residential dwellings, business and office complexes, shopping complexes, multi-family residential complexes, institutional buildings, airports, cemeteries, interior plantscapes, ornamental gardens, wildlife plantings, parks, playgrounds, schools, daycare facilities, other landscaped areas. Mainspring GNL may also be applied to plants in and around small and large companion animal (including horses) boarding and exercising areas providing the animals exposed to the treated areas are not used for human consumption.

Mainspring GNL can be applied as a foliar spray, a soil broadcast spray, a soil drench, and soil injection and by chemigation. When applied as a foliar spray, the product will have translaminar and systemic movement, providing residual efficacy of foliar insect pests. When Mainspring GNL is applied by drench to the root system of plants, it will be translocated upward in the plant due to its systemic activity. Systemic upward movement in herbaceous plants will be quicker than in those of woody plants, such as trees and shrubs. Soil applications should be made prior to anticipated pest infestation to allow adequate systemic movement to achieve optimum levels of control.

Mainspring GNL controls a broad range of chewing and sucking pests. Insecticidal activity is primarily through ingestion. This results in paralysis, rapid inhibition of feeding and disruption of other key physiological functions. Depending on the target pest, mortality occurs within two to seven days. The rapid cessation of feeding results in less plant injury. It is recommended that Mainspring GNL be applied when pest populations are low to prevent targeted insects from increasing to damaging levels.

Integrated Pest Management (IPM) Programs

Mainspring GNL can be used in an IPM program with biological agents for controlling ornamental pest. Beneficial arthropods can help control other insect and mite pests and reduce the potential for secondary pest outbreaks. Mainspring GNL can reduce the target pest species that serve as a food source for beneficial arthropods, which can indirectly affect their populations. If Mainspring GNL is tank-mixed with a product that negatively impacts beneficial arthropods, the full benefit of Mainspring GNL to an IPM program may not be realized.

Resistance Management

GROUP	28	INSECTICIDE
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Mainspring GNL is in GROUP 28 of the EPA's Insecticide and Acaricide Groups based on Target Site of Action.

Some insects are known to develop resistance to products that have been used repeatedly for control. When this occurs, the label use rates can fail to reduce the pest population below threshold levels. As the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of active classes of insecticides on succeeding generations and targeting the most susceptible life stage. Consult your local Cooperative Extension Service specialist or pest control advisor for the latest information on resistance management in your area or crop.

Plant Safety

Mainspring GNL has been found to be generally safe when applied according to label use directions to the listed plants. Phytotoxicity testing has not been performed on all possible species and cultivars. Individual plant species or cultivars may be sensitive to the final spray solution, including tank mixes. If local experience is not available, a small number of plants should be treated and observed for phytotoxicity for at least one week before making an application to the entire planting to ensure plant safety.

APPLICATION EQUIPMENT CLEANING

Prior to application, start with clean, well maintained application equipment. Immediately following application, thoroughly clean all application equipment to reduce the risk of forming hardened deposits that might become difficult to remove. Drain application equipment. Thoroughly rinse application equipment and flush hoses, boom and nozzles with clean water. Clean all other associated application equipment. Take all necessary safety precautions when cleaning equipment. **DO NOT** clean equipment near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

CALIBRATION OF APPLICATION EQUIPMENT

Proper maintenance and calibration of spraying and chemigation equipment are essential for optimal insect pest control. If you have questions about calibration, contact a State Extension Service specialist, the equipment manufacturer or other experts.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments if the need arises.

MIXING INSTRUCTIONS

Mainspring GNL is a suspension concentrate (SC) formulation. Mainspring GNL must be diluted with water before application.

Mainspring GNL readily mixes with water and may be used in many different types of application equipment and applied to either the foliage or root system. Mix product with the required amount of water and apply according to label use directions.

The pH of application mixtures containing Mainspring GNL should be adjusted to a pH of 8 or less using a commercially available acidifier. When applying Mainspring GNL by chemigation, adjust the pH of the chemigation systems supply or nurse tank using a commercially available acidifier. Adjust the pH of application mixtures after all products being applied have been added to the tank and uniformly mixed for broadcast and drench applications.

Mixing Directions

1. Use clean, well maintained and properly calibrated application equipment.
2. Fill sprayer tank 1/4 to 1/2 full of water.
3. Shake the container of Mainspring GNL well before pouring.
4. Add the appropriate amount of Mainspring GNL directly into the spray tank.
5. If preparing a tank mixture, follow the tank-mixing sequence below.
6. Mix the spray solution thoroughly and continue agitation to keep the insecticide in suspension. Use mechanical or hydraulic agitation. Do not use air agitation.
7. It is recommended that the mixture not be stored in the spray or mix tank overnight.

Tank mixtures

Mainspring GNL may be tank-mixed with other pesticides. When tank-mixing Mainspring GNL with other pesticides, observe the restrictions and precautions on all product labels.

- **DO NOT** exceed the label application rates for any product.
- **DO NOT** mix Mainspring GNL with any product containing a label prohibition against such mixing.
- Always follow the tank mix instructions of the product label that is most restrictive.

The physical compatibility of Mainspring GNL may vary with different sources of pesticide products and local cultural practices. A jar compatibility test is recommended prior to tank-mixing with other pesticides, fertilizers or adjuvants to ensure the compatibility of Mainspring GNL with the other products. For a jar compatibility test, mix the proper proportions of any pesticides, adjuvants, or fertilizers in water in a pint or quart jar and allow it to stand at least 20 minutes. If the combination remains mixed or can be re-mixed readily, the mixture is considered physically compatible.

Tank-mixing Sequence

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

1. Water-soluble bags
2. Water-dispersible granules
3. Wettable powders
4. Mainspring GNL and other water-based suspension concentrates
5. Water-soluble concentrates
6. Oil-based suspension concentrates
7. Emulsifiable concentrates
8. Adjuvants, surfactants, oils
9. Soluble fertilizers

APPLICATION PROCEDURES

Mainspring GNL may be used in many different types of application equipment and applied to either the foliage or root system. Mix product with the required amount of water and apply as desired dependent upon the selected use pattern.

Consult your Cooperative Extension Service specialist or pest control advisor for regionally specific information regarding application timing.

SPRAY DRIFT REDUCTION MANAGEMENT

Do not apply when wind speed favors drift beyond the area intended for treatment. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all of these factors when making application decisions. Avoiding spray drift is the responsibility of the applicator.

Importance of Droplet Size: An important factor influencing drift is droplet size. Select nozzles and pressure that deliver medium spray droplets as indicated in nozzle manufacturer's catalogs and in accordance with ASAE Standard S-572. Nozzles that deliver coarse spray droplets may be used to reduce spray drift provided spray volume per acre (GPA) is increased to maintain crop coverage. For aerial application, spray should be released at the lowest possible height consistent with good pest control and flight safety. Applications more than 10 feet above the crop canopy should be avoided. Low humidity and high temperature increase the evaporation rate of spray droplets and therefore the likelihood of spray drift to aquatic areas. Avoid spraying during conditions of low humidity and/or high temperature.

Wind Speed Restrictions: Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size, canopy and equipment specifications, determine drift potential at any given wind speed. Do not apply when winds are greater than 15 mph and avoid gusty and windless conditions. Avoiding applications when wind direction is toward an aquatic area can reduce risk exposure to sensitive aquatic areas.

Restrictions during Temperature Inversions: Do not make aerial or ground applications during temperature inversions. Drift potential is high during temperature inversions. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature 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, the movement of smoke from a ground source can also identify inversions. 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.

FOLIAR APPLICATION

Foliar application rates are listed in Table 1. Foliar applications offer locally systemic activity with residual control of listed pests. Mix the Mainspring GNL with the required amount of water and apply as a full coverage foliar spray to control the target pest. Apply Mainspring GNL when pest populations are low to prevent them from increasing to damaging levels

When making foliar applications to plants with hard-to-wet foliage, such as holly, ivy, or pine, the addition of a spreading adjuvant is recommended. Do not use adjuvants with binding or sticking properties as these may reduce absorption of Mainspring GNL by the plant. Use sufficient water volume to provide thorough and uniform coverage. Avoid making applications where uniform coverage cannot be obtained or where excessive spray drift can occur.

If making a low volume, or mist-type application, use the equivalent amount of product as you would when making an application with higher volumes of water for a given area.

TABLE 1. FOLIAR APPLICATION TO LISTED PLANTS GROWN IN GREENHOUSES, NURSERIES (INCLUDING FIELD- AND CONTAINER-GROWN PLANTS IN SHADE AND LATH HOUSES) AND INTERIOR PLANTSCAPES, AND RESIDENTIAL AND COMMERCIAL LANDSCAPES

Ornamentals		
Breeding crops	Foliage plants	Shrubs
Bulb, corm and tuber crops (such as tulips, calla lilies)	Ground covers	Succulents
Evergreens, including conifers	Ornamental grasses	Trees, including non-bearing fruit and nut trees ¹
Flowering plants	Palms	Vines (non-bearing) ¹
Flowers grown for seed production	Perennial plants	
	Pot and bedding plants	
Target Pests	Amount of Mainspring GNL	Use Directions
Aphids	4 – 8 fl oz per 100 gal 1.2 – 2.4 ml per gal	Start treatments at first signs of pest infestation.
Lace bugs Leaf-feeding beetles (such as Japanese beetle adults and viburnum leaf beetle larvae) Leaf-feeding caterpillars (such as fall webworms, gypsy moths, redbud leaf-folders) Leafminers Soft scales (such as oak Lecanium scales) Thrips Whiteflies ²	2 – 8 fl oz per 100 gal 0.6 – 2.4 ml per gal	Reapply on a 7- to 14-day interval.
All pests listed above – maximum residual control	16 fl oz per 100 gal 4.7 ml per gal	

USE RESTRICTIONS

Maximum Rate per Crop:

- For crops and plants grown indoors, do not apply more than 32 fl oz of Mainspring GNL per acre per crop per year (equivalent to 0.4 lb of active ingredient per acre per crop per year).
- For crops and plants grown outdoors, do not apply more than 32 fl oz of Mainspring GNL per acre per year (equivalent to 0.4 lb of active ingredient per acre per year).

One fl oz = 29.5 milliliters

¹Non-bearing fruit and nut trees and vines are those trees and vines that will not bear edible fruit or nuts for one year after application.

²May observe less activity on *Trialeurodes* spp.

BROADCAST APPLICATION

Broadcast applications of Mainspring GNL may be applied for white grub, annual bluegrass weevils, billbugs, chinch bugs (suppression), turf caterpillars, European crane flies, and spittlebugs in grassy, weedy, or bare soil areas, including residential and commercial landscapes. Broadcast application rates for these areas are presented in Table 2. Apply in sufficient water to uniformly cover the area being treated (a minimum of 2 gallons per 1,000 square feet is recommended). Irrigate immediately after application or allow rainfall to move the product into the soil. Use properly calibrated application equipment that will produce a uniform, coarse droplet spray, using a low pressure setting to eliminate off target drift. Mainspring GNL may be applied either before planting or after plants have been established.

APPLICATION TIMING

White Grubs: Apply Mainspring GNL from [April][May][June] to [early] September for preventative and early curative control of listed white grub species. The need for an application may be based on historical monitoring of the site, previous records or experiences, current season adult trapping or other methods. Irrigate turf immediately after application or allow rainfall to move the product into the soil.

Annual Bluegrass Weevil: Apply Mainspring GNL when overwintered adult annual bluegrass weevils are observed in late April or early May to prevent damage from first generation larvae in late-May and June. An application of Mainspring GNL at this time will also provide white grub control.

Billbugs: Apply Mainspring GNL when overwintered adult billbugs are first observed. This will usually occur in late April or early May in regions with cool-season turfgrasses. An application of Mainspring GNL at this time will also provide white grub control.

Chinch Bugs: For suppression of chinch bugs, apply Mainspring GNL before eggs hatch.

European Crane Fly: Apply Mainspring GNL between July and November to control the fall generation of European crane fly larvae in turfgrass. An application of Mainspring GNL in early July will also provide excellent white grub control. The higher rate listed in Table 1 may be required to achieve control when applications are made in November.

Spittlebugs: Mainspring GNL will provide control of two-lined spittlebug when applications are made in spring or summer.

Turf Caterpillars: Mainspring GNL will provide excellent curative and residual caterpillar control in turfgrass. To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. Mowing vegetation to lowest possible height will ensure more consistent control. Apply in sufficient water to uniformly cover the area being treated (a minimum of 2 gallons per 1,000 square feet is recommended for grassy, weedy, or bare soil areas).

TABLE 2: BROADCAST APPLICATIONS OF MAINSPRING GNL IN AND AROUND GREENHOUSES, NURSERIES, INTERIOR PLANTSCAPES, LATH AND SHADE HOUSES, AND RESIDENTIAL AND COMMERCIAL LANDSCAPES.

Use Sites			
Grassy, weedy, mulched or bare soil areas in and around greenhouses, nurseries, interior plantscapes, lathhouses, shadehouses and residential and commercial landscapes. Also for areas under trees and shrubs that are being grown in-ground.			
Target Pest	Application Rate (Product per Acre)	Application Rate (Product per 1,000 sq ft)	Use Directions
Turf caterpillars (including armyworms, cutworms, and sod webworms)	2 – 16 fl oz	0.046 – 0.367 fl oz 1.4 – 10.9 ml	Mowing vegetation to lowest possible height prior to application will ensure more consistent control.
White grubs (including <i>Aphodius</i> spp., Asiatic garden beetle, black turfgrass ataeenius ¹ , Japanese beetle, May/June beetles (<i>Phyllophaga</i> spp.), northern masked chafer, oriental beetle, southern masked chafer and sugarcane grub)	8 – 16 fl oz	0.184 – 0.367 fl oz 5.4 – 10.9 ml	Apply in sufficient water to uniformly cover the area being treated (a minimum of 2 gal/1,000 sq ft is recommended for grassy, weedy, mulched or bare soil areas).
Annual bluegrass weevil	12 – 20 fl oz	0.275 – 0.459 fl oz 8.1 – 13.6 ml	
Billbugs	8 – 20 fl oz	0.184 – 0.459 fl oz 5.4 – 13.6 ml	
Chinch bugs (suppression only)	8 – 20 fl oz	0.184 – 0.459 fl oz 5.4 – 13.6 ml	
European Crane Fly	8 – 16 fl oz	0.184 – 0.367 fl oz 5.4 – 10.9 ml	
Spittlebugs	12 – 20 fl oz	0.275 – 0.459 fl oz 8.1 – 13.6 ml	

USE RESTRICTION

Maximum Rate per Crop: For crops and plants grown outdoors, do not apply more than 32 fl oz of Mainspring GNL/A per year (equivalent to 0.4 lb of active ingredient/A per year).

¹ Applications targeting black turfgrass ataeenius larvae should be made from peak adult flight through peak egg hatch to ensure control of the first-generation larvae. A second application may be required to control second-generation black turfgrass aetaenius.

APPLICATION TO SOIL MEDIA

Mainspring GNL can be applied to the growing media of containerized plants to control listed ornamental pests. Apply Mainspring GNL when pest populations are low to prevent the increase of that population to damaging levels. Apply to moist soil media. **DO NOT** apply to dry or saturated soil media. For optimal performance, **DO NOT** apply drench to soil media until roots have grown after transplanting. **DO NOT** leach treated soil media for at least 7 days after application or performance may be reduced. Heavy rainfall or excessive irrigation after application could reduce insect control performance. In general, higher rates will be needed to control insect pests on woody plants as compared to those on herbaceous plants.

Drench Application

For drench applications, prepare a dilute drench solution by mixing Mainspring GNL in water at the rate listed in Table 3. Apply drench solution to containers, flats, trays, benches or beds according to the application rates given in Table 3. Drench volume should be sufficient to thoroughly wet soil media without overflowing or leaching from the container. Follow the drench application with moderate irrigation. Irrigate carefully during the next 10 days to avoid loss of active ingredient from the container.

TABLE 3. DRENCH APPLICATION TO SOIL MEDIA OF LISTED CONTAINERIZED PLANTS GROWN IN GREENHOUSES, NURSERIES (INCLUDING FIELD- AND CONTAINER-GROWN PLANTS IN SHADE AND LATH HOUSES), INTERIOR PLANTSCAPES, AND RESIDENTIAL AND COMMERCIAL LANDSCAPES

Ornamentals			
Breeding crops	Foliage plants	Shrubs	
Bulb, corm and tuber crops (such as tulips, calla lilies)	Ground covers	Succulents	
Evergreens, including conifers	Ornamental grasses	Trees, including non-bearing fruit and nut trees ¹	
Flowering plants	Palms	Vines (non-bearing) ¹	
Flowers grown for seed production	Perennial plants		
	Pot and bedding plants		

Target Pests	Amount of Mainspring GNL	Amount of drench solution to apply per container		Use Directions
		Container Size (inches)	Fl oz solution/ container	
Aphids	8 – 12 fl oz per 100 gal 2.4 – 3.6 ml per gal	4	2 - 3	Start treatment at the first sign of pest infestation. Reapply as needed according to use directions. Apply the specified volume of product to the growing container based on container size. Follow with moderate irrigation. Irrigate carefully over the next 10 days and avoid leaching of the container.
Leaf-feeding caterpillars (such as armyworms and loopers)		5	3 - 4	
Leafminers		6	4	
Thrips (foliar feeding)		7	5 - 7	
Whiteflies (such as <i>Bemisia</i> spp. (Biotype B & Q)) ²		8	6 - 10	
Other ornamental pests		10	16 - 20	
		For larger containers, apply 6 – 8 fl oz of dilute solution per gallon of soil media.		
		For flats, trays, benches, or beds, apply sufficient amount of drench solution to adequately wet soil media without leaching.		

USE RESTRICTIONS

Maximum Rate per Crop:

- For crops and plants grown indoors, do not apply more than 32 fl oz Mainspring GNL per acre per crop per year (equivalent to 0.4 lb of active ingredient per acre per year).
- For crops and plants grown outdoors, do not apply more than 32 fl oz Mainspring GNL per acre per year (equivalent to 0.4 lb of active ingredient per acre per year).

One fl oz = 29.5 milliliters

¹ Non-bearing fruit and nut trees and vines are those trees and vines that will not bear edible fruit or nuts for one year after application.

² May observe less activity on *Trialeurodes* spp.

Application through Irrigation systems (Chemigation)

Mainspring GNL may be applied by injection into an irrigation system, either alone or in combination with other pesticides or chemicals that are registered for application through irrigation systems. Dilution ratios are normally 1:100 to 1:200, depending on the system. Application dosages are presented in **Table 4** below.

Apply this product only through micro-irrigation (individual spaghetti tube), drip irrigation, overhead irrigation, ebb and flood irrigation, or motorized calibrated irrigation equipment. **DO NOT** apply through any other type of irrigation system. Non-uniform distribution of Mainspring GNL applied by chemigation can result in reduced product effectiveness.

Apply Mainspring GNL under the instructions specified in the specific use recommendations and not according to the irrigation schedule unless the events coincide. In general, set the equipment to apply the minimum amount of water per acre. Run the system at 86–90% of the manufacturer's maximum rated travel speed.

Users should check with state and local regulatory agencies for potential use restrictions before applying any agricultural chemical through sprinkler irrigation equipment.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Using Water from Public Water Systems

DO NOT APPLY MAINSPRING GNL THROUGH ANY IRRIGATION SYSTEM PHYSICALLY CONNECTED TO A PUBLIC WATER SYSTEM.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days per year. Mainspring GNL may be applied through irrigation systems which may be supplied by a public water system **ONLY** if the water from the public water system is discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and to top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

Any irrigation system using water supplied from a public water system must also meet the following requirements:

Operating Instructions for All Recommended Types of Irrigation Systems

1. The system must be calibrated to uniformly apply the rates specified. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
2. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing, check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

6. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
7. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
8. Do not apply when wind speed favors drift beyond the area intended for treatment.

Chemigation using Micro, Drip, Overhead or Motorized Irrigation Equipment

To prepare injector tank solution, add Mainspring GNL to 1 gallon of injector tank water. An injection ratio of 1:100 is recommended (1 part injector tank solution to 100 parts irrigation water).

TABLE 4. CHEMIGATION USING MICRO, DRIP, OVERHEAD, OR MOTORIZED IRRIGATION EQUIPMENT OF SOIL MEDIA OF CONTAINERIZED PLANTS GROWN IN GREENHOUSES, NURSERIES (INCLUDING FIELD- AND CONTAINER-GROWN PLANTS IN SHADE AND LATH HOUSES), RESIDENTIAL AND COMMERCIAL LANDSCAPES, AND INTERIOR PLANTSCAPES

Ornamentals		
Breeding crops	Foliage plants	Shrubs
Bulb, corm and tuber crops (such as tulips, calla lilies)	Ground covers	Succulents
Evergreens, including conifers	Ornamental grasses	Trees, including non-bearing fruit and nut trees ¹
Flowering plants	Palms	Vines (non-bearing) ¹
Flowers grown for seed production	Perennial plants	
	Pot and bedding plants	

Target Pests	Chemigation Rate		Use Directions
Aphids	Injection Ratio	Fl oz product/gallon injector tank water	Start treatments prior to establishment of high pest pressure and reapply as needed.
Leaf-feeding caterpillars (such as armyworms and loopers)			
Leafminers	1 to 100	8 - 12	Apply the specified volume of product to the growing container based on container size. Follow with moderate irrigation. Irrigate carefully over the next 10 days and avoid leaching of the container.
Thrips (foliar feeding)	Irrigation system should be calibrated to deliver 6-8 fl oz of dilute solution per gallon of soil media.		
Whiteflies (such as <i>Bemisia</i> spp. (Biotype B & Q)) ²			
Other ornamental pests			

USE RESTRICTIONS

Maximum Rate per Crop:

- For crops and plants grown indoors, do not apply more than 32 fl oz Mainspring GNL per acre per crop per year (equivalent to 0.4 lb of active ingredient per acre per crop per year).
- For crops and plants grown outdoors, do not apply more than 32 fl oz Mainspring GNL per acre per year (equivalent to 0.4 lb of active ingredient per acre per year).

One fl oz = 29.5 milliliters

¹ Non-bearing fruit and nut trees and vines are those trees and vines that will not bear edible fruit or nuts for one year after application.

² May observe less activity on *Trialeurodes* spp.

Ebb-and-Flood Chemigation

To calculate the volume of water needed for chemigation using ebb-and-flood irrigation:

1. Bring a minimum of 10 containers to a soil moisture of field capacity.
2. Allow the soil media to dry.
3. Bring the containers back to field capacity.
4. Multiply the amount of water needed to bring the soil in a single container back to field capacity by the total number of containers to be chemigated.
5. Add this volume to the amount of water needed to flood the area to be treated.

TABLE 5. CHEMIGATION (EBB-AND-FLOOD) OF SOIL MEDIA OF CONTAINERIZED PLANTS GROWN IN GREENHOUSES AND INTERIOR PLANTSCAPES

Ornamentals		
Breeding crops	Foliage plants	Shrubs
Bulb, corm and tuber crops (such as tulips, calla lilies)	Ground covers	Succulents
Evergreens, including conifers	Ornamental grasses	Trees, including non-bearing fruit and nut trees ¹
Flowering plants	Palms	Vines (non-bearing) ¹
Flowers grown for seed production	Perennial plants	
	Pot and bedding plants	

Target Pests	Chemigation Rate		Use Directions
Aphids	Container Size (inches)	Fl oz Mainspring GNL/ 1,000 containers	Start treatment at the first sign of pest infestation. Reapply as needed according to use directions.
Leaf-feeding caterpillars (such as armyworms and loopers)			
Leafminers	4	1.9 – 2.8	Apply the specified volume of product to the growing container based on container size. Follow with moderate irrigation. Irrigate carefully over the next 10 days and avoid leaching of the container.
Thrips (foliar feeding)	5	2.5 – 3.8	
Whiteflies (such as <i>Bemisia</i> spp. (Biotype B & Q)) ²	6	2.5 – 3.8	
	7	4.4 – 6.6	
Other ornamental pests	8	6.3 – 9.5	
	10	12.7 – 19.0	
	For larger containers, apply 6 fl oz of Mainspring GNL per 1,000 gallons of soil media.		

USE RESTRICTION

Maximum Rate per Crop: For crops and plants grown indoors, do not apply more than 32 fl oz of product per acre per crop per year (equivalent to 0.4 lb of active ingredient per acre per crop per year).

One fl oz = 29.5 milliliters

¹ Non-bearing fruit and nut trees and vines are those trees and vines that will not bear edible fruit or nuts for one year after application.

² May observe less activity on *Trialeurodes* spp.

IN-GROUND SOIL DRENCH & INJECTION APPLICATIONS

Mainspring GNL is a systemic product and will be translocated upward into the plant from root uptake. Soil treatment application rates are listed in **Table 6**. To assure optimum effectiveness, the product must be placed where the growing portion of the target plant can absorb the active ingredient. For this reason, basal application within one to three feet of the root flare of trees and shrubs is recommended. Application can be made by soil injection, soil drenches and soil broadcast sprays. When making soil applications to plants with woody stems, systemic activity will be delayed until the active ingredient is translocated throughout the plant. In some cases, this delay could be 60 days or longer. For this reason, applications should be made prior to anticipated pest infestation to achieve optimum levels of control.

Calculations for soil injection/drench applications of Mainspring GNL:

- 1: Calibrate the application equipment to determine its flow rate in gallons per minute.
- 2: Select an injecting/drenching volume per inch of tree diameter at breast height (DBH) or foot of shrub height.
- 3: Refer to the **Table 7** below to determine the amount of time that is required to deliver the desired volume per injection/drench site. The example highlighted in **Table 7** shows that 10 seconds are required per inch of tree DBH or foot of shrub height when injecting/drenching 1 quart of solution per site using a flow rate of 1.5 gallons per minute.
- 4: Determine how much solution to mix.
- 5: Refer to the **Table 8** below to determine the amount of Mainspring GNL that must be mixed in the desired volume of water based on the injection volume identified above.

TABLE 6. SPECIFIC USE INSTRUCTIONS FOR SYSTEMIC SOIL TREATMENTS WITH MAINSPRING GNL TO IN-GROUND-GROWN PLANTS IN AND AROUND GREENHOUSES, NURSERIES (INCLUDING FIELD- AND CONTAINER-GROWN PLANTS IN SHADE AND LATH HOUSES), INTERIOR PLANTSCAPES, AND COMMERCIAL AND RESIDENTIAL LANDSCAPES

Ornamentals		
Evergreens, including conifers	Palms	Trees, including non-bearing fruit and nut trees ¹
Foliage plants	Shrubs	
Target Pests	Dosage (per foot of height or per inch of trunk diameter at breast height (DBH))	Use Directions
Aphids (such as Spirea aphids)	0.125 – 0.25 fl oz	Soil Drench: Mix required dose in water and uniformly apply to soil around base of the plant. Refer to Tables 7 and 8 for proper calibration and mixing. Pull back mulch before drenching. Keep soil moist for 7 days after application.
Lace bugs		
Soft scales (such as Magnolia scale)		
Adelgids (including hemlock woolly adelgid)	0.25 fl oz	Soil Injection: Mix required dose in water and inject into soil around the base of the plant. Refer to Tables 7 and 8 for proper calibration and mixing.
Borers (including beetle and caterpillar larvae)		
Leaf-feeding beetles (Including elm flea weevils and Japanese beetle adults)		
Leaf-feeding caterpillars (including redbud leaf-folders and gypsy moths)		
Leafminers (including birch leafminers and boxwood leafminers)		
Plant bugs (including honeylocust plant bugs)		
Psyllids (including boxwood psyllid)		
Whiteflies		

USE RESTRICTIONS

Maximum Rate per Crop:

- For crops and plants grown indoors, do not apply more than 32 fl oz Mainspring GNL per acre per crop per year (equivalent to 0.4 lb of active ingredient per acre per crop per year).
- For crops and plants grown outdoors, do not apply more than 32 fl oz Mainspring GNL per acre per year (equivalent to 0.4 lb of active ingredient per acre per year).

¹ Non-bearing fruit and nut trees and vines are those trees and vines that will not bear fruit or nuts for one year after application.

TABLE 7: ORNAMENTAL SOIL TREATMENT APPLICATION CALIBRATION CHART

Volume per Site*	Flow Rate (Gallons per minute)					
	0.5 gallon	0.75 gallon	1 gallon	1.5 gallons	2 gallons	3 gallons
1 pint	15.0 sec	10.0 sec	7.5 sec	5.0 sec	3.75 sec	2.5 sec.
1 quart	30.0 sec	20.0 sec	15.0 sec	10.0 sec	7.5 sec	5.0 sec
2 quarts	1.0 min	40.0 sec	30.0 sec	20.0 sec	15.0 sec	10.0 sec
1 gallon	2.0 min	1 min 20 sec	1.0 min	40.0 sec	30.0 sec	20.0 sec

*Site = Soil injection site – the selected volume is applied per inch of tree DBH or foot of shrub

TABLE 8: ORNAMENTAL SOIL TREATMENT APPLICATION MIXING CHART

Volume per Site*	Application Rate Per Inch DBH or Foot Ht (fl oz)	Fl oz product per 100 gallons	Fl oz product per 50 gallons	Fl oz product per 25 gallons	Fl oz product per 10 gallons	Fl oz product per 1 gallon
1 pint	0.125	100	50	25	10	1
	0.25	200	100	50	20	2
1 quart	0.125	50	25	12.5	5	0.5
	0.25	100	50	25	10	1
2 quarts	0.125	25	12.5	6.25	2.5	0.25
	0.25	50	25	12.5	5	0.5
1 gallon	0.125	12.5	6.25	3.125	1.25	0.125
	0.25	25	12.5	6.25	2.5	0.25

*Site = Soil injection site – the selected volume is applied per inch of tree DBH or foot of shrub

Broadcast Applications to Flower Beds and Groundcovers

Mainspring GNL may be applied for white grub control in flower beds and ground covers. Flower bed and groundcover application rates are listed in Table 9. Apply in sufficient water to uniformly cover the area being treated (a minimum of 2 gallons per 1,000 square feet is recommended for flower beds and groundcover applications). Irrigate immediately after application or allow rainfall to move the product into the soil. Mainspring GNL may be applied before planting or after plants have been established.

TABLE 9: ORNAMENTAL FLOWERS AND GROUNDCOVERS SOIL TREATMENT APPLICATION RATES

Target Pest	Fl oz product per acre	Fl oz product per 1,000 sq ft	Lb ai per acre
White grubs (including <i>Aphodius</i> spp., Asiatic garden beetle, black turfgrass ataeenius ¹ , Japanese beetle, May/June beetles (<i>Phyllophaga</i> spp.), northern masked chafer, oriental beetle, southern masked chafer and sugarcane grub)	8 - 16	0.184 - 0.367	0.104 - 0.208

USE RESTRICTION

Maximum Rate per Crop: For crops and plants grown outdoors, do not apply more than 32 fl oz Mainspring GNL /A per year (equivalent to 0.4 lb of active ingredient/A per crop per year).

¹ Applications targeting black turfgrass ataeenius larvae should be made from peak adult flight through peak egg hatch to ensure control of the first-generation larvae. A second application may be required to control second-generation black turfgrass aetaenius.

Bark Applications

Apply Mainspring GNL to the trunks and lower branches of trees and shrubs to control clearwing moth borer larvae. Bark treatment application rates are listed in Table 10. Make applications after the emergence of adult moths and before their eggs hatch. Thorough coverage of the bark is required for satisfactory control. Adult emergence varies according to the pest species, host tree, environmental conditions and geographic location. Consult your local Cooperative Extension Service specialist or pest control advisor for regionally specific information regarding application timing.

TABLE 10: ORNAMENTAL BARK TREATMENT APPLICATION RATES

Target Pests	Fl oz product per 100 gallons	Lb ai per 100 gallons	PPM	Percent ai (wt/vol)
Clearwing borers, including peachtree borer	4	0.052	62.5	0.00625
	8	0.104	125	0.0125
	16	0.208	250	0.025
For maximum residual control of the pests listed above	32	0.416	500	0.05

USE RESTRICTION

Maximum Rate per Crop: For crops and plants grown outdoors, do not apply more than 32 fl oz of Mainspring GNL/A per year (equivalent to 0.4 lb of active ingredient/A per year).

STORAGE AND DISPOSAL

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

Pesticide Storage

Do not subject to temperatures below 32 degrees F. Store product in original container only in a location inaccessible to children and pets. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Not for use or storage in or around the home.

Pesticide Disposal

Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling [less than or equal to 5 gallons]



Non-refillable 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, or by other procedures approved by state and local authorities.

Container Handling [greater than 5 gallons]

Non-refillable 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 closures. 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, or by other procedures approved by state and local authorities.

Container Handling [greater than 5 gallons]

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

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For non-emergency information (e.g., current product information), call Syngenta Crop Protection at 1-800-334-9481

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