***S*-METOLACHLOR | GROUP 15 | HERBICIDE**

SpiruS™

Contains *S*-metolachlor, the active ingredient used in Pennant Magnum®.

Sale, use, and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.
For weed control in nurseries, turf, and landscape plantings. Not for Homeowner Use

ACTIVE INGREDIENT:	**(% by weight)**
S-metolachlor (CAS No. 87392-12-9)	83.7%
OTHER INGREDIENTS:	16.3%
TOTAL:	100.0%

SpiruS contains 7.62 lbs active ingredient per gallon.
SpiruS is formulated as an emulsifiable concentrate (EC).

EPA Reg. No.: 91234-188

KEEP OUT OF REACH OF CHILDREN

CAUTION

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 below for additional Precautionary Statements.

FIRST AID	
If in eyes:	▪ Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. ▪ Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. ▪ Call a poison control center or doctor for treatment advice.
If on skin or clothing:	▪ Take off contaminated clothing. ▪ Rinse skin immediately with plenty of water for 15 - 20 minutes. ▪ Call a poison control center or doctor for treatment advice.
If swallowed:	▪ Call a poison control center or doctor immediately for treatment advice. ▪ Have the person sip a glass of water if able to swallow. ▪ 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 inhaled:	▪ 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.
HOT LINE 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 SafetyCall at **1-844-685-9173** for emergency medical treatment information.	

For Chemical Emergency: Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night Within USA and Canada:
1-800-424-9300 or +1 703-527-3887 (collect calls accepted)

SpiruS™ is not manufactured, or distributed by Syngenta Crop Protection, LLC, seller of Pennant Magnum®.

Atticus

Manufactured for:
Atticus, LLC
940 NW Cary Parkway, Suite 200
Cary, NC 27513

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing. This product may cause skin sensitization reactions in some people.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate or Viton® ≥ 14 mils
- Shoes plus socks
- Protective eyewear

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

Engineering Control Statements

Mixers and loaders supporting aerial applications are required to use closed systems. The closed system must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)]. When using the closed system, the mixers' and loaders' PPE requirements may be reduced or modified as specified in the WPS.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- 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

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.

Groundwater Advisory

S-metolachlor is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

S-metolachlor can contaminate surface water through ground spray drift. 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 high potential for reaching surface water via runoff for several weeks or months after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of S-metolachlor from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

Non-Target Organism Advisory

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

Reporting Ecological Incidents:

To report ecological incidents, including mortality, injury, or harm to plants and animals, call 984-465-4800.

Mixing/Loading Instructions

Care must be taken when using this product to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates.

Check-valves or antisiphoning devices must be used on all mixing and/or irrigation equipment.

This product may not be mixed or loaded within 50 ft of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. This product may not be mixed/loaded or used within 50 ft of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 ft of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading sites.

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.

Endangered Species Protection Requirements:

It is a Federal offense to use any pesticide in a manner that results in an unauthorized "take" (e.g., kill or otherwise harm) of an endangered species and certain threatened species, under the Endangered Species Act section 9. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult http://www.epa.gov/espp/, call 1-844-447-3813, or email ESPP@epa.gov. You must use the Bulletin valid for the month in which you will apply the product.

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 24 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
- Chemical-resistant gloves made of barrier laminate or Viton ≥ 14 mils
- Shoes plus socks
- Protective eyewear

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 enter or allow others to enter the treated area until sprays have dried.

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

Sale, use, and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

PRODUCT INFORMATION

SpiruS controls many annual grasses, certain annual broadleaf weeds, and yellow nutsedge.

SpiruS may be used on commercial and residential warm-season turfgrasses and other noncrop land, including, airports, roadsides, golf courses, sports fields, public recreational areas, ornamental gardens, cemeteries, and other landscaped areas. **SpiruS** may also be used in and around container and field-grown ornamentals, nonbearing nursery stock, and on sod farms.

DO NOT USE IN GREENHOUSES OR OTHER ENCLOSED STRUCTURES.

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Do not apply under conditions which favor runoff or wind erosion of soil containing this product to nontarget areas.

To prevent off-site movement due to runoff or wind erosion:

1. Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
2. Do not apply to impervious substrates such as paved or highly compacted surfaces.
3. Do not use tailwater from the first flood or furrow irrigation of treated fields to treat nontarget crops unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

NOTICE TO USER: Plant tolerances to **SpiruS** have been found to be acceptable in the specific genera and species listed on this label. Because of the large number of species and varieties of plants, it is impossible to test each for tolerance to **SpiruS**. Neither the manufacturer nor the seller has determined whether or not **SpiruS** can be used safely on plants not specified on this label. Therefore, the professional user should determine if **SpiruS** can be used safely by testing the labeled rates on a particular group of similar unlabeled ornamental plants in a small area before widespread use or by checking with the local weed specialist for guidance. Likewise, if the professional user plans to apply **SpiruS** for control of weed species not listed on this label, **SpiruS** should be tested on a small-scale basis before widespread use or the local weed specialist contacted for guidance.

WEED RESISTANCE MANAGEMENT

For resistance management, **SpiruS** is a Group 15 herbicide. Any weed population may contain or develop plants naturally resistant to **SpiruS** and other Group 15 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance management strategies should be followed.

To delay herbicide resistance, take one or more of the following steps:

- Rotate the use of **SpiruS** or other Group 15 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled nu the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicides with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance contact your Atticus, LLC representative or call 984-465-4800.

Report any incidence of non-performance of this product against a particular weed species to your Atticus, LLC retailer or representative. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemicals means to remove escapes, as practical, with the goal of preventing further seed production.

APPLICATION PROCEDURES

Ground Application: Apply **SpiruS** alone or in tank mixtures by ground equipment in a minimum of 10 gal of spray mixture per acre, unless otherwise specified.

Use sprayers that provide accurate and uniform application. For **SpiruS** tank mixtures with wettable powder or dry flowable formulations, screens and strainers should be no finer than 50-mesh. Rinse sprayer thoroughly with clean water immediately after use.

Calculate the amount of herbicide needed for band treatment by the following formula:

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{broadcast rate per acre} = \text{amount needed per acre of field}$$

Aerial Application (Sod Farms Only): Apply **SpiruS** in water alone or in tank mixtures with atrazine, simazine, or other herbicides registered for use on sod farms in a minimum total volume of 2 gal/A by aircraft. See **Turfgrass** section for listing of applicable warm-season grasses. Avoid application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft, using low-drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply **SpiruS** or **SpiruS** mixtures at a minimum upwind distance of 400 ft from sensitive plants.

Avoid application to humans or animals. Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin.

SPRAY EQUIPMENT

Aerial Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses, or to applications using dry formulations.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the **Mandatory Spray Drift Management** and **Spray Drift Advisories** sections below.

MANDATORY SPRAY DRIFT MANAGEMENT

Aerial Applications:

- Do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets (ASABE S641),
- If the wind speed is 10 miles per hour or less, applicators must use ½ swath displacement upwind at the downwind edge of the field. When the wind speed is between 11-15 miles per hour, applicators must use ¾ swath displacement upwind at the downwind edge of the field.
- Do not apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- Do not apply during temperature inversions.

Ground Boom Applications:

- User must only apply with the release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to select the nozzles and pressure that deliver medium or coarser droplets (ASABE S572).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

Boomless Ground Applications:

- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplet size (ASABE S572.3) for all applications.
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

Spray Drift Advisories

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.

Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.

Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

Adjust Nozzles - Follow nozzle manufacturers' recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

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BOOM HEIGHT – Ground Boom
For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT - Aircraft
Higher release heights increase the potential for spray drift.

SHIELDED SPRAYERS
Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

BOOMLESS GROUND APPLICATIONS:
Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

HANDHELD TECHNOLOGY APPLICATIONS:
Take precautions to minimize spray drift.

TEMPERATURE AND HUMIDITY
When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS
Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND
Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Overhead or Microjet Irrigation Application: SpiruS alone or in tank mixture with other herbicides which are registered for overhead or microjet application may be applied in irrigation water at rates listed on this label. Apply this product only through an overhead or microjet irrigation system. Do not apply this product through any other type of irrigation system. Crop injury or lack of effectiveness can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension specialists, equipment manufacturers, or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system, unless the pesticide label prescribed safety devices for public water systems are in place. 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.

Operation Instructions

1. The system must contain a functional check-valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent watersource contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quickclosing check-valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Prepare a mixture with a minimum of 1 part water to 1 part herbicide(s) and inject this mixture into the overhead or microjet system. Injecting a larger volume of a more dilute mixture per hour will usually provide more accurate calibration of metering equipment. Maintain sufficient agitation to keep the herbicide in suspension.
9. Meter into irrigation water during entire period of water application.
10. Apply in 1/2 - 1 inch of water. Use the lower water volume (1/2 inch) on coarse textured soils and the higher volume (1 inch) on fine-textured soils. More than 1 inch of water at application may reduce weed control by moving the herbicide below the effective zone in the soil.

Precaution for Overhead or Microjet Applications: Where sprinkler distribution patterns do not overlap sufficiently, unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, injury to desirable plants may result.

Dry Bulk Granular Fertilizers

Many dry bulk granular fertilizers may be impregnated or coated with **SpiruS** alone or with selected **SpiruS** tank mixtures which are registered and not prohibited from use on dry bulk granular fertilizers.

When applying **SpiruS** or **SpiruS** mixtures with dry bulk granular fertilizers, follow all directions for use and precautions on the respective product labels regarding target crops, rates per acre, soil texture, application methods (including timing of application), and rotational crops.

All individual state regulations relating to dry bulk granular fertilizer blending, registration, labeling, and application are the responsibility of the individual and/or company selling the herbicide/fertilizer mixture.

Prepare the granular herbicide/fertilizer mixtures by using any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender. Nozzles used to spray **SpiruS** or **SpiruS** tank mixtures onto the fertilizer must be placed to provide uniform spray coverage.

If the herbicide/fertilizer mixture is too wet, use a highly absorptive material, such as Agsorb® granules, Microcel E (Johns-Manville Products Corporation), diatomaceous earth, or finely powdered clay, to obtain a dry free-flowing mixture. Add the absorptive material separately and uniformly to the herbicide/fertilizer mixture and blend to form a suitable free-flowing mixture. Generally, less than 2% by weight of absorptive material will be needed.

Calculate amounts of **SpiruS** and other herbicides needed by the following formula:

$$\frac{2{,}000}{\text{lbs. of fertilizer per acre}} \times \text{pt/A of liquid or flowable product} = \text{pt of liquid or flowable product per ton of fertilizer}$$

$$\frac{2{,}000}{\text{lbs. of fertilizer per acre}} \times \text{pt/A of dry product} = \text{lb of dry product per ton of fertilizer}$$

*Precautions: To avoid potential for explosion, (1) Do not impregnate **SpiruS** or **SpiruS** mixtures on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers. (2) Do not combine mixtures of **SpiruS** plus any other herbicide with single superphosphate (0-20-0) or triple superphosphate (0-46-0). (3) Do not use **SpiruS** or **SpiruS** mixtures on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.*

Application

Apply 100 - 800 lb of the herbicide/fertilizer mixture per acre. For best results, apply the mixture uniformly to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential to prevent possible crop injury. Nonuniform application may also result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow incorporation of the mixture into the soil may improve weed control. On fine- or medium-textured soils in areas where soil incorporation is not planned, i.e., reduced tillage situations or in some conventional tillage situations, make applications approximately 30 days before planting to allow moisture to move the herbicide/fertilizer mixture into the soil. On coarse textured soils, make applications approximately 14 days prior to planting.

Precaution: To avoid potential injury of ornamental plants, do not use the herbicide/fertilizer mixture on container-grown plants and where planting beds are being formed.

MIXING PROCEDURES

SpiruS Alone: Mix **SpiruS** with water or fluid fertilizer and apply as a spray. Fill the spray tank 1/2 - 3/4 full with water or fluid fertilizer, start agitation, add the proper amount of **SpiruS**, then add the rest of the water or fluid fertilizer. Agitate continuously during mixing and application to maintain a uniform spray mixture.

Tank Mixtures: When using **SpiruS** in a tank mixture, it is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. Fill the spray tank 1/4 full with water or fluid fertilizer and start agitation. (1) Add all products packaged in water-soluble bags first and at the same time. These products **must be mixed in clean water only** (preslurry in water when fertilizer is the main carrier). (2) Continue agitation. Then add water-dispersible granules (WG formulations). Allow the granules to disperse. (3) Add any wettable powder (WP) formulations to the tank as agitation continues. (4) Add spray adjuvants and spray markers, if needed. Use additives approved for application to turf and ornamentals. Check additive label before use. (5) Add flowable liquids (L) or suspension concentrates (SC). (6) Add **SpiruS** to the spray tank last. Continue to fill the sprayer with the rest of the water or fluid fertilizer. Maintain agitation in the spray tank until all of the solution has been applied.

When tank mixing **SpiruS** solutions, allow each product to fully disperse before adding other products. Check compatibility of the mixture using the test described below before mixing in the spray tank.

Restrictions: Before using **SpiruS** in a tank mix with fluid fertilizer or other registered pesticides, determine the tolerance of the plant species by applying the combination to a limited area during a period of active growth. **Do not use fluid fertilizers as a carrier for applications to container-grown ornamentals.**

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Compatibility Test: Check compatibility with herbicide(s) each time before use. Be especially careful when using complete suspension or fluid fertilizers, as serious compatibility problems are more likely to occur. Commercial application equipment may improve compatibility in some instances. The following test assumes a spray volume of 25 gal/A. For other spray volumes, make appropriate changes in the ingredients. Check compatibility using this procedure.

1. Add 1 pt of water or fertilizer to each of 2 one-qt jars with tight lids.
2. To **one** of the jars, add 1/4 tsp or 1.1 milliliters of a compatibility agent approved for this use, such as Compex® or Unite® (1/4 tsp is equivalent to 2 pt/100 gal spray). Shake or stir gently to mix.
3. To **both** jars, add the appropriate amount of herbicide(s). If more than one herbicide is used, add them separately with dry herbicides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix. The appropriate amount of herbicides for this test follows:

   Dry herbicides: For each pound to be applied per acre, add 1.5 level teaspoons to each jar.

   Liquid herbicides: For each pint to be applied per acre, add 0.5 teaspoon or 2.5 milliliters to each jar.

   After adding all ingredients, put lids on and tighten, and invert each jar 10 times to mix. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the 2 jars. If either mixture separates, but can be readily remixed, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (a) slurry the dry herbicide(s) in water before addition, or (b) add 1/2 of the compatibility agent to the water or fertilizer and the other 1/2 to the emulsifiable concentrate or flowable herbicide before the addition to the mixture. If incompatibility is still observed, do not use the mixture.
4. After conducting the compatibility test, any pesticide wastes should be disposed of according to the instructions given in the **STORAGE AND DISPOSAL** section of this label.

CROP USE DIRECTIONS

Nurseries and Landscape Plantings

Apply **SpiruS** at rates indicated below to control many annual grasses, certain broadleaf weeds, and yellow nutsedge (see following list). Calibrate applicator equipment before use according to the manufacturer's directions.

Weeds Controlled	
annual bluegrass	giant foxtail
barnyardgrass (watergrass)	goosegrass
black nightshade	green foxtail
carpetweed	pigweed
crabgrass	prairie cupgrass
crowfootgrass	red rice
doveweed	signalgrass (Brachiaria)
fall panicum	southwestern cupgrass
Florida pusley	witchgrass
foxtail millet	yellow foxtail
galinsoga	yellow nutsedge
Weeds Partially Controlled*	
common purslane	seedling johnsongrass
groundsel	shattercane
hairy nightshade	volunteer sorghum
sandbur	

* Control of these weeds can be erratic due partially to variable weather conditions.

Application

Apply **SpiruS** in sufficient carrier to obtain thorough coverage. For liquid carriers, use a minimum of 10 gal/A. Apply before grass, broadleaf weeds, or yellow nutsedge emerge, or after existing weeds or nutsedge plants have been removed. A second application may be needed to provide longer weed control not to exceed a total of 4.2 pt/A (1.5 fl oz/1,000 sq ft) (4.0 lb ai/A) per year or crop cycle, whichever is less.

Application Rates of SpiruS

Soil Texture	pt/A*	fl oz/1,000 sq ft
COARSE	1.3 - 2.0	0.4 - 0.7
MEDIUM	1.3 - 2.0	0.4 - 0.7
FINE	2.0 - 2.6	0.7 - 0.9

* Use higher rates for a given soil texture on high organic matter soils and where yellow nutsedge and/or a heavy infestation of weeds is expected. Use the lower rates on soils with low organic matter content and where light infestations of weeds are expected. In peat and muck soils and soils highly enriched with organic matter (i.e., sawdust) and/or synthetic mixes, the activity of **SpiruS** may be reduced.

If banded applications are used, refer to the **PRODUCT INFORMATION** section of this label to calculate the amount of **SpiruS** needed.

*Precautions: (1) To avoid plant injury, do not apply **SpiruS** to seedbeds, cutting beds, or unrooted cuttings before transplanting or to plants until the soil has firmly settled around roots. (2) When **SpiruS** is applied broadcast over-the-top of plant foliage, follow with sufficient overhead irrigation to wash **SpiruS** from the foliage to reduce the chance of injury.*

SpiruS has been found to be safe on the following plants:

Container-Grown Plants

Scientific Name	Common Name/Variety
Abelia grandiflora	Glossy Abelia
Acer rubrum	Red Maple
Ajuga reptans	Ajuga
Aucuba japonica variegate	Variegated Aucuba
Betula nigra	River Birch
Buxus spp.	Boxwood
Carex spp.	Carex
Cornus spp.	Dogwood
Cotoneaster spp.	Cotoneaster
Euonymus fortunei	Euonymus
Euonymus kiautschovicus	Manhattan Euonymus
Forsythia spp.	Forsythia
Gardenia jasminoides	Gardenia
Hedera helix	English Ivy
Hosta lancifolia	Variegated Hosta
Iberis sempervirens	Candytuft
Ilex attenuata	Savannah Holly
Ilex cornuta	Dwarf Burford Holly
Ilex crenata	Japanese Holly
Juniperus chinensis	Chinese Juniper
Juniperus horizontalis	Juniper
Juniperus sabina	Hick's Juniper/Foemina
Juniperus virginiana	Eastern Red Cedar
Kalmia spp.	Mountain Laurel
Kniphofia uvaria	Poker Plant
Lantana spp.	Shrub Verbena
Lavandula angustifolia	English Lavender
Leucothoe fontanesiana	Leucothoe
Ligularia stenocephala	Golden Rockets
Ligustrum japonicum	Ligustrum or Privet
Liriope mascara	Liriope
Liriope spicata	Green Liriope
Myrica cerifera	Wax Myrtle
Ophiopogon japonicus	Mondo Grass
Opuntia humifusa	Prickly Pear Cactus
Pachysandra terminalis	Japanese Pachysandra
Panicum virgatum	Switchgrass
Penstemon x *Mexicali*	Beard-Tongue
Phormium colensoi	Flax
Pinus strobus	White Pine

(continued)

Container-Grown Plants *(continued)*

Scientific Name	Common Name/Variety
Pinus thunbergii	Japanese Black Pine
Pittosporum tobira	Pittosporum
Quercus phellos	Willow Oak
Rhododendron catawbiense	Catawba Azalea
Rhododendron indica	Formosa/Indica Azalea
Rhododendron obtusum	Kurume Azalea
Sempervivum tectorum	Hens and Chicks
Solidago sempervirens	Goldenrod
Taxus cuspidata	Yew
Thuja occidentalis	Globe Arborvitae
Tsuga Canadensis	Hemlock
Vernonia noveboracensis	Ironweed
Viburnum spp.	Viburnum
Yucca spp.	Yucca

Field- and Liner*-Grown Plants and Plants in Landscape Plantings

* Plants transplanted normally in rows in a nursery or similar area for further growth before transplanting to final growing location (place of establishment).

Scientific Name	Common Name/Variety
Abelia spp.	Glossy Abelia
Abies spp.	Fir
Acer spp.	Maple
Achillea spp.	Yarrow
Agapanthus africanus	African Lily
Ageratum spp.	Blue Ageratum
Ajuga reptans	Ajuga
Allium spp.	Allium
Alyssum spp.	Alyssum
Antirrhinum majus	Snapdragon
Aquilegia spp.	Columbine
Artemisia stelleriana	Dusty Miller
Asclepias spp.	Milkweed
Aster spp.	Aster
Aucuba spp.	Aucuba
Berberis spp.	Barberry
Betula spp.	Birch
Bougainvillea spp.	Bougainvillea
Buxus spp.	Boxwood
Camellia spp.	Camellia
Campanula carpatica	Bellflower
Canna indica	Canna Lily
Carex spp.	Carex
Chrysanthemum spp.	Chrysanthemum, Daisy
Citrus spp.**	Citrus**

(continued)

Field- and Liner*-Grown Plants and Plants in Landscape Plantings *(continued)*

Scientific Name	Common Name/Variety
Coreopsis spp.	Coreopsis
Cornus spp.	Dogwood
Cortaderia selloana	Pampas Grass
Cotoneaster spp.	Cotoneaster
Crocus spp.	Crocus
Cryophytum crystallium	Ice Plant
Cytisus racemosus	Sweet Broom
Daucus carota	Queen Anne's Lace
Delphinium spp.	Delphinium
Dianthus barbatus	Sweet William
Elaeagnus spp.	Elaeagnus
Endymion spp.	Endymion
Escallonia fradesii	Escallonia
Euonymus spp.	Euonymus
Ficus spp.	Fig
Forsythia spp.	Forsythia
Fraxinus spp.	Ash
Gaillardia spp.	Gaillardia
Gardenia jasminoides	Gardenia
Gazania splendens	Gazania Gold Rush
Gelsemium sempervirens	Carolina Jessamine
Geranium spp.	Geranium
Geum spp.	Geum
Gingko biloba	Gingko
Gladiolus x *hortulanus*	Gladiolus
Gleditsia triacanthos	Honey Locust
Hedera spp.	English Ivy
Hemerocallis spp.	Daylily
Hibiscus spp.	Hibiscus
Hosta lancifolia	Hosta
Hyacinthus spp.	Hyacinth
Hydrangea spp.	Hydrangea
Hypericum spp.	St. John's Wort
Iberis sempervirens	Candytuft
Ilex spp.	Holly
Illicium spp.	Spicebush
Impatiens spp.	Impatiens
Iris spp.	Iris
Jasmine spp.	Jasmine
Juniperus spp.	Juniper
Kalmia spp.	Kalmia

(continued)

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Field- and Liner*-Grown Plants and Plants in Landscape Plantings *(continued)*

Scientific Name	Common Name/Variety
Kniphofia uvaria	Poker Plant
Lagerstroemia spp.	Crepe Myrtle
Lantana spp.	Shrub Verbina
Lavandula angustifolia	English Lavender
Leucothoe spp.	Leucothoe
Ligularia stenocephala	Golden Rockets
Ligustrum spp.	Privet
Lilium spp.	Lily
Liquidambar spp.	Sweetgum
Liriodendron tulipifera	Tulip Tree
Liriope spp.	Liriope
Lonicera spp.	Honeysuckle
Lupinus spp.	Lupines
Lythrum spp.	Loosestrife
Magnolia spp.	Magnolia
Malus spp.**	Crabapple, Apple**
Mesembryanthemum crystallinum	Ice Plant
Morea spp.	Fortnight Lily
Muscari armeniacum	Muscari
Myrica spp.	Wax Myrtle
Nandina domestica	Bamboo
Narcissus spp.	Narcissus
Nerium oleander	Oleander
Oenothera spp.	Primrose
Ophiopogon japonicus	Mondo Grass
Opuntia humifusa	Prickly Pear Cactus
Ornithogalum umbellatum	Star of Bethlehem
Osmanthus spp.	Osmanthus
Pachysandra spp.	Pachysandra
Panicum virgatum	Switchgrass
Pelargonium x *hortorum*	Geranium
Penstemon x *mexicali*	Beard-Tongue
Petunia spp.	Petunia
Phlox spp.	Phlox
Phormium colensoi	Flax
Photinia spp.	Photinia
Physocarpus spp.	Ninebark
Physostegia spp.	Physostegia
Picea spp.	Spruce
Pieris japonica	Japanese Andromeda
Pinus spp.	Pine

(continued)

Field- and Liner*-Grown Plants and Plants in Landscape Plantings *(continued)*

Scientific Name	Common Name/Variety
Pittosporum spp.	Pittosporum
Podocarpus spp.	Podocarpus
Populus spp.	Poplar
Potentilla spp.	Potentilla (Cinquefoil)
Prunus spp.**	Cherry**
Pseudotsuga menziesii	Douglas Fir
Pyracantha spp.	Firethorn
Pyrus spp.**	Pear**
Quercus spp.	Oak
Raphiolepis spp.	Indian Hawthorne
Rhododendron spp.	Rhododendron/Azalea
Robinia spp.	Locust
Rosa spp.	Rose
Ruellia carolinensis	Mexican petunia
Rumohra adiantiformis	Leatherleaf Fern
Salix spp.	Willow
Scilla spp.	Scilla
Sedum spp.	Stone Crop
Sempervivum tectorum	Hens and Chicks
Senecio doronicum	Leopard's-bane
Solidago sempervirens	Goldenrod
Spiraea spp.	Spiraea
Stachys spp.	Stachys
Statice sinuatum	Annual Statice
Symphoricarpos spp.	Snowberry
Syringa spp.	Lilac
Tagetes spp.	Marigold
Taxodium distichum	Bald Cypress
Taxus spp.	Yew
Ternstroemia gymnanthera	Cleyera
Thuja spp.	Arborvitae
Tsuga spp.	Hemlock
Tulipa spp.	Tulip
Vernonia noveboracensis	Ironweed
Veronica spp.	Veronica
Viburnum spp.	Viburnum
Vinca spp.	Periwinkle
Viola x *Wittrockiana*	Pansy
Washingtonia robusta	Mexican Fan Palm
Weigela spp.	Weigela
Wisteria sinensis	Wisteria

(continued)

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Field- and Liner*-Grown Plants and Plants in Landscape Plantings *(continued)*

Scientific Name	Common Name/Variety
Yucca spp.	Yucca
Zinnia spp.	Zinnia

** Do not apply to trees or plants that will bear harvestable fruit within 12 months, or illegal residues may result.

SpiruS may be applied in tank mixtures with prodiamine, simazine, oxadiazon, glyphosate, or other compatible herbicides registered for use on ornamentals. Refer to the respective product labels for weeds controlled and for plants on which they are registered for use. When applying **SpiruS** in tank mixtures, observe the more restrictive directions for use, precautions, and limitations on this label or the respective tank mix product label.

Restrictions:

- Do not apply more than 2.6 pt/A (2.4 lb ai/A) in a single application.
- Do not apply more than 4.2 pt/A (4.0 lb ai/A) in a year.
- Do not make more than 2 applications per year (not to exceed 4.2 pt/A (4.0 lb ai/A) per year).

Turfgrass

Warm Season Grasses (Bermudagrass, Centipedegrass, St. Augustinegrass, Bahiagrass, and Zoysiagrass) including Commercial St. Augustinegrass Sod Production

Do not use **SpiruS** on turfgrasses in New York State.

Apply **SpiruS before weeds emerge**. Since soil moisture is necessary to activate **SpiruS**, irrigate with 1/2 inch of water if rainfall does not occur within 7 days after treatment (See following **Precautions**).

Weeds Controlled

Scientific Name	Common Name/Variety	Rate of SpiruS*
Cyperus compressus	Annual Sedge	2.6 pt/A (see **Restrictions**)
Cyperus esculentus	Yellow Nutsedge	
Digitaria ischaemum	Smooth Crabgrass	
Digitaria sanguinalis	Large Crabgrass	
Leptochloa fascicularis	Bearded Sprangletop	1.3 - 2.6 pt/A (see **Restrictions**)
Leptochloa uninervia	Mexican Sprangletop	
Murdannia nudiflora	Doveweed	
Poa annua	Annual Bluegrass	

* 1.0 pt/A = 0.3 fl oz/1,000 sq ft
1.3 pt/A = 0.4 fl oz/1,000 sq ft
2.6 pt/A = 0.9 fl oz/1,000 sq ft

Restrictions:

- Split rate of applications can be made at rates not less than 1 pt/A (0.9 lb ai/A).
- Do not apply more than 2.6 pt/A (2.4 lb ai/A) in a single application.
- Do not apply more than once every 6 weeks.
- For commercial sod production, do not apply more than 4.2 pt/A (4.0 lb ai/A) per year to the same area used for sod production.
- For commercial sod production, do not make more than 4 applications per acre per year (not to exceed 4.2 pt/A (4.0 lb ai/A) per year).
- For other turf uses, do not apply more than 2.6 pt/A (2.4 lb ai/A) per year.
- For other turf uses, do not make more than 2 applications per acre per year (not to exceed 2.6 pt/A (2.4 lb ai/A) per year).
- Do not graze or feed turf clippings to animals.

*Precautions for All Uses on Turf: Delayed spring green-up, temporary slowing of growth and yellowing may occur following application. To avoid turf injury, (1) Application of a nitrogen-containing fertilizer at or soon after applying **SpiruS** will minimize delay in spring green-up and any temporary yellowing; (2) use only on turfgrass not under stress from infestations of insects, nematodes, or diseases; (3) do not use on golf greens, tees, or aprons; (4) do not seed or overseed with desirable turfgrass 4 months before or after treatment, and (5) do not apply this product to newly seeded grasses until they have overwintered and have a well-developed rhizome system. (6) Before using **SpiruS** in the tank mix with fluid fertilizer or other registered pesticides, determine the tolerance of the turf species by applying the combination to a limited area during a period of active growth. (7) In turfgrass areas which have heavy thatch, the weed control of **SpiruS** may be reduced.*

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a tightly closed container in a cool, dry place. Store in original container and out of reach of children, preferably in a locked storage area.

PESTICIDE DISPOSAL: Pesticide spray mixture or rinsate that cannot be used should be disposed of in a landfill approved for pesticides. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by the use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

For plastic containers ≤ 5 gallons: Nonrefillable Container: Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple Rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 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 other procedures allowed by state and local authorities.

For plastic containers > 5 gallons: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple Rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Recap 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 other procedures allowed by state and local authorities.

LIMITATION OF WARRANTY AND LIABILITY

IMPORTANT: READ BEFORE USE. Read the entire Directions for Use, Conditions of Warranties and Limitations of Liability before using this product. If these terms and conditions are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Disclaimer of Warranties and Limitations of Liability. **CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Ineffectiveness, injury, and other unintended consequences may result because of such factors as manner of use or application (including misuse), the presence of other materials, weather conditions, and other unknown factors, all of which are beyond the control of ATTICUS, LLC. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, ATTICUS, LLC makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond statements on this label. **LIMITATIONS OF LIABILITY:** To the extent consistent with applicable law, neither ATTICUS, LLC the manufacturer, nor the Seller shall be liable for any indirect, special, incidental or consequential damages resulting from the use, handling, application, storage, or disposal of this product. To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use, handling, application, or storage of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid.

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