OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

WASHINGTON, D.C. 20460

June 14, 2024

Joseph Wolfe
Regulatory Manager, T&O
Nufarm, Inc.
11901 S. Austin Avenue
Alsip, IL 60803

Subject: Notification per PRN 98-10 – Move ABN "Lock Down SC Herbicide" from sublabel 2 to sublabel 3
Product Name: Panther SC Non-Crop Herbicide
EPA Registration Number: 71368-114
Application Date: 04/30/2024
Case Number: 610631

Dear Joseph Wolfe:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped "NOTIFICATION" and placed in our records.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) lists examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you have any questions, please contact Hector Escobar at 202-566-1371 or at escobar.hector@epa.gov.

Sincerely,

Shaja B. Joyner, Product Manager 20
Fungicide-Herbicide Branch
Registration Division 7505T

GROUP	14	HERBICIDE

PANTHER™ SC – NON CROP HERBICIDE

- **[Subpart 1 – Aquatics] -** [ABN: PANTHER SC HERBICIDE – AQUATIC] [ABN: CLIPPER SC AQUATIC HERBICIDE] FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS
- **[Subpart 2 – Non-Crop / IVM]** - [ABN: PANTHER SC HERBICIDE – IVM]~~[ABN: LOCK DOWN SC HERBICIDE – IVM]~~ FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS, CONIFER AND POPLAR RE-FORESTATION SITES
- **[Subpart 3 – Aquatics, Non-Crop/IVM, and T&O]** [ABN: SureGuard SC Herbicide – T&O] [ABN: LOCK DOWN SC HERBICIDE] - [FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS] [FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS, CONIFER AND POPLAR RE-FORESTATION SITES] [FOR USE IN CONTAINER AND FIELD GROWN CONIFERS (INCLUDING CHRISTMAS TREES) AND DECIDUOUS TREES, AROUND ESTABLISHED WOODY ORNAMENTALS IN LANDSCAPES AND MAINTAIN NON-CROP AREAS AND DORMANT BERMUDAGRASS

ACTIVE INGREDIENT:	
Flumioxazin*……	41.4%
OTHER INGREDIENTS: ……	58.6%
TOTAL: ……..	100.0%

*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

Panther SC contains 4 pounds flumioxazin per gallon.

[For ≤ 5 Gallon Containers:] [Shake Well Before Use]
[For > 5 Gallon Containers:] [Shake Well, Agitate or Recirculate Before Use]

KEEP OUT OF REACH OF CHILDREN

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 [NEXT PAGE] [BELOW] FOR ADDITIONAL PRECAUTIONARY STATEMENTS

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300
For Medical Emergencies Only, Call (877) 325-1840

EPA REG. NO. 71368-114
EPA EST. NO.

MANUFACTURED FOR
NUFARM INC.
11901 S. AUSTIN AVE.
ALSIP, IL 60803

Nufarm

NOTIFICATION

71368-114

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

06/14/2024

[PANTHER SC HERBICIDE – AQUATIC]
[CLIPPER SC Aquatic Herbicide]
[For use in Aquatics Market Segment]
[Patent Pending]

[SUBPART 1]

GROUP 14 HERBICIDE

PANTHER™ SC – AQUATIC HERBICIDE

ABN: CLIPPER SC AQUATIC HERBICIDE

FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS

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EPA REG. NO. 71368-114
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NET CONTENTS:

MANUFACTURED FOR
NUFARM INC.
11901 S. AUSTIN AVE.
ALSIP, IL 60803

Nufarm

[Designation as "NONREFILLABLE" or "REFILLABLE" for containers ≥ 5 GAL]

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing.

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 1-877-325-1840 for emergency medical treatment information.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some of the materials that are chemical-resistant to this product are listed below.

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- chemical-resistant gloves made of any waterproof material
- shoes and socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are 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/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

If not used in accordance with directions on the label, this product can be toxic to non-target plants and aquatic invertebrates. Do not apply directly to treated, finished drinking water reservoirs or drinking water receptacles when the water is intended for human consumption. Drift and runoff may be hazardous to non-target plants and aquatic organisms in water adjacent to treated areas. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This pesticide is toxic to plants. Use strictly in accordance with the drift and run-off precautions on this label in order to minimize off-site exposures.

Treatment of aquatic weeds can result in oxygen loss from decomposition of dead weeds. This loss can cause fish suffocation. Therefore, to minimize this hazard, treat 1/3 to 1/2 of the water area in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State agency with primary responsibility for regulating pesticides before applying to public waters to determine if a permit is needed.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

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

Read the entire label before using this product. Use strictly in accordance with label precautionary statements and directions, and with applicable state and federal regulations.

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.

RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product must be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift,' and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather,

soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Nufarm. The Buyer must be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN DO NOT APPLY THIS PRODUCT. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Nufarm shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

See also **WARRANTY DISCLAIMER** and **LIMITATION OF LIABILITY** sections of the label for additional information.

WEED RESISTANCE MANAGEMENT

This product is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 14 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 this product or other Group 14 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 seedling 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.
- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective and 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 by 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 herbicide with a different mode of action, if available.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action.
- Contact your local sales representative, agricultural dealer, consultant, local extension specialist, applicator, crop advisor, and/or appropriate state agricultural extension service representative for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- Report any incidence of non-performance of this product against a particular weed species to your local sales representative or agricultural dealer.

BEST MANAGEMENT PRACTICES

- Plant into weed-free fields and keep fields as weed-free as possible.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
- Do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Prevent an influx of weeds into the field by managing field borders.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.

- Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.
It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions 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.

PRODUCT INFORMATION

This product is a fast acting contact herbicide that controls selected submersed, emergent, and floating aquatic weeds. It is most effective when applied to young, actively growing weeds in water with a pH of less than 8.5.

This product may be applied to the following quiescent or slow moving bodies of water:
- Bayous
- Canals
- Drainage ditches
- Lakes
- Marshes
- Ponds (including golf course ponds)
- Reservoirs

Application of this product to public aquatic areas may require special approval and/or permits. Consult with local state agencies, if required.

USE RESTRICTIONS
- Do not apply to intertidal or estuarine areas.
- Do not exceed 400 ppb of this product during any one application.
- Do not re-treat the same section of water with this product more than 6 times per year.
- Do not retreat the same section of water within 28 days of application, except in areas with dense weed vegetation. In these areas, treat the remaining weeds within 10 to 14 days.
- In high density weed populations only treat 1/2 the water body at one time.
- Treated water may not be used for irrigation purposes on food crops until at least five (5) days after application.
- Do not use in water utilized for crawfish farming.

USE PRECAUTIONS
- There is no post-application holding restriction against use of treated water for drinking or recreational purposes (e.g. swimming, fishing).
- Treated water may be used for irrigation purposes on turf and landscape ornamentals as outlined in the *Irrigation Restrictions Following Application* table.

IRRIGATION RESTRICTIONS FOLLOWING APPLICATION

Application Method	Application Rate	Average Water Depth	Turf and Landscape Ornamentals	Ornamentals grown for production in Greenhouse and Nursery
Surface Spray	6 to 12 oz per surface acre	Greater than 3 feet	None	5 days
		Less than 3 feet	12 hours	5 days
Subsurface	Less than 200 ppb	N/A	1 day	5 days
	200 to 300 ppb	N/A	2 days	5 days
	300 to 400 ppb	N/A	3 days	5 days

SPRAY 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 is responsible for considering all these factors when making decisions.

Do not spray this product under circumstances where spray droplets may drift on to unprotected persons, or plantings of food, forage or crops that might be damaged, or rendered unfit for sale, use or consumption. These precautions are not applicable for subsurface injection by closed systems.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial, ground or watercraft-based surface applications when wind velocity favors on-target product deposition. Apply only when the wind speed is less than or equal to 10 mph.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Low humidity and high temperatures increase the evaporation rate of spray droplets, and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.

Properly maintain and calibrate all aerial, ground and water based application equipment.

Where states have more stringent regulations, observe them.

APPLICATION AND SPRAYER INFORMATION

Mixing Instructions

- Mix with water having pH of 5 to 7. If pH is higher than 7, use an appropriate buffer to reduce pH to desirable range.
- Fill clean spray tank 1/2 full of desired level with water and add buffering agent if necessary.
- Add the required amount of this product to the spray tank while agitating.
- Fill spray tank to desired level with water. Ensure that this product is thoroughly mixed before making applications. Continue agitation until spray solution has been applied.
- Mix only the amount of spray solution that can be applied the day of mixing. Apply this product within 48 hours of mixing.

ADDITIVES

When applying this product to the foliage of floating or emerged aquatic weeds, mix with an adjuvant approved for use in aquatic sites. Mix this product with a non-ionic surfactant containing at least 80% active ingredient. Follow adjuvant manufacturer's label rates. Verify mixing compatibility by a jar test before using.

JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND THIS PRODUCT

Perform a jar test before mixing commercial quantities of this product, when using this product for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pint of the water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.

2. Add 1 milliliter of this product to the quart jar for every 3 fl oz of this product per acre being applied (4 ml if 12 fl oz per acre is the desired rate of this product), gently mix until product goes into suspension.

3. Add 1 milliliter of non-ionic surfactant, gently mix.

4. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.

5. An ideal tank mix combination will be uniform. If any of the following conditions are observed question the choice of adjuvant:

    a) Layer of oil or globules on the mixture's surface.

    b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.

    c) Clabbering: Thickening texture (coagulated) like gelatin.

Sprayer Cleanup

If spray equipment is dedicated to application of aquatic herbicides, the following steps are to clean the spray equipment:

- Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.

If spray equipment will be used for purposes other than applying aquatic herbicides, it must be thoroughly cleaned following application of this product. The following steps must be used to clean the spray equipment:

1. Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank with clean water.
4. Circulate through sprayer for 5 minutes.
5. Then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
6. Drain tank completely.
7. Remove all nozzles and screens and rinse them with clean water.

AERIAL APPLICATION

To obtain satisfactory weed control, aerial application of this product, must provide uniform coverage of surface weeds and sufficient contact time. When applied by air, this product may not provide adequate control of some submersed weeds. Do not apply by air when significant drift on to non-target plants may occur or when wind velocity is more than 10 mph. Avoid spraying this product within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and avoid drift, the following directions must be observed:

Volume and Pressure
Apply this product in a minimum of 5 gallons of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gallons per acre may not provide adequate weed control. Higher gallonage applications provide more consistent weed control.

Nozzles and Nozzle Operation
Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles including diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0° and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

Adjuvants
Refer to the additive section or the tank mix partners label for adjuvant specifications.

DIRECTIONS FOR USE
TO CONTROL FLOATING AND EMERGED WEEDS USING SURFACE APPLICATION

This product will control weeds and algae listed in Table 1 when applied as a broadcast spray with appropriate equipment. For best results, apply this product to the foliage of actively growing weeds.

Table 1. Floating and Emerged Weeds

Common Name	Scientific Name
Alligator Weed	*Alternanthera philoxeroides*
Duckweed*	*Lemna* spp.
Frog's-bit	*Limnobium spongia*
Mosquito Fern	*Azolla* spp.
Water Fern	*Salvinia* spp.
Water Lettuce	*Pistia stratiotes*
Watermeal*	*Wolffia* spp.
Water Pennywort	*Hydrocotyle* spp.
Filamentous algae	*Pithophara*
Filamentous algae	*Cladophora*

* Coverage is essential for effective duckweed and watermeal control. Any duckweed and/or watermeal escapes left in the water column will quickly re-infest the water body. Apply 200 ppb concentration throughout the water body to control duckweed and watermeal.– see **DIRECTIONS FOR USE TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS** section for additional application information.

Surface Application
Apply this product as a broadcast spray at 6 to 12 fl oz of formulated product per acre plus an adjuvant approved for use in aquatics.

This product is a contact herbicide that quickly degrades in the water column so plants that do not initially come in contact with the herbicide will not be controlled. Apply this product in a minimum of 30 gallons of water per acre to all areas of the water body where weeds exist. Coverage is essential for effective control as all floating weeds need to be exposed to lethal concentrations in all parts of the water body. Any untreated escapes or re-introductions of plants that were not treated will reestablish in areas where surface weeds had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

Application of this product during early morning hours may enhance weed control. When applying to densely packed actively growing surface weeds, ensure adequate coverage. Rapid decomposition of vegetation resulting from herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat floating surface weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with 2,4-D, diquat, glyphosate or other registered foliar applied herbicides for enhanced control of floating and emergent weeds.

Consult a manufacturer's label for specific rate restrictions and weeds controlled. Always follow the most restrictive label restrictions

and precautions for all products used when making applications involving tank mixes.

Application Equipment
Apply this product with sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume. Apply by backpack or handgun sprayer, airboat, helicopter, airplane or other application equipment that will ensure thorough coverage of target plant foliage.

DIRECTIONS FOR USE
TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS

This product will control submersed and floating weeds listed in Table 2, *Submersed and Floating Weeds Controlled by Subsurface Application*, when applied subsurface with appropriate equipment.

Table 2. Submersed and Floating Weeds Controlled by Subsurface Application

Common Name	Scientific Name
Coontail	*Ceratophyllum demersum*
Duckweed	*Lemna* spp.
Fanwort	*Cabomba caroliniana*
Hydrilla	*Hydrilla verticillata*
Hygrophila	*Hygrophila polysperma*
Naiad, Southern	*Najas guadalupensis*
Pondweed, Curlyleaf	*Potamogeton crispus*
Pondweed, Sago	*Potamogeton pectinatus*
Pondweed, Variable-Leaf	*Potamogeton diversifolius*
Water Fern	*Salvinia* spp.
Water Lettuce	*Pistia stratiotes*
Watermeal	*Wolffia* spp.
Watermilfoil, Eurasian	*Myriophyllum spicatum*
Watermilfoil, Variable-Leaf	*Myriophyllum heterophyllum*

Subsurface Treatment
Apply this product at a rate that will produce an initial concentration of 200 to 400 ppb (of active ingredient flumioxazin) in the water column.

This product is rapidly absorbed by target plants, but also breaks down quickly in water with a pH greater than 8.5. The pH of water surrounding mats of submersed vegetation can exceed 8.5 by early to mid-day, due to photosynthetic processes. Application of this product under these conditions may provide only partial weed control, and regrowth is likely. For best control, apply this product in a minimum of 30 gallons of water per acre in the early morning to actively growing weeds and early in the season before surface matting occurs. Complete coverage and sufficient contact time of submersed weeds with this product is required for optimal performance. Application of this product with subsurface trailing hoses designed to distribute the herbicide within the plant stand will provide more effective and longer term control of submersed weeds. Use Table 3, *Subsurface Application Rates* to determine the amount of this product needed to achieve desired concentration at different water depths. Use higher concentrations when weed biomass is heavy and/or weeds are more mature and topped out. Any untreated plants that are left in the water column can re-infest treated areas that had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

When applying this product to densely packed actively growing submersed weeds, a rapid decomposition of vegetation resulting from herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat submersed weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with other registered submersed applied herbicides for enhanced control of submersed and floating weeds.

Application Equipment for Water Column Treatment
To improve distribution in the water column and ensure adequate coverage, when possible apply this product with subsurface trailing hoses in order to place the herbicide under the surface and throughout the biomass of aquatic vegetation. Keep swath width to a minimum in order to maximize contact with submersed aquatic vegetation. In small shallow water bodies, surface sprays may be required to apply this product. Apply by backpack or handgun sprayer or other application equipment that will ensure adequate coverage of target plant.

Information on Hydrilla Control in Florida
Apply this product as a subsurface treatment for hydrilla control. For best control of hydrilla apply during the late Winter/early Spring and/or early to late Fall. Efficacy of this product will be enhanced at these timings due to lower potential biomass present and lower

pH of the water. If applied to mature topped out hydrilla, this product will cause some discoloration and loss of growing tips, but regrowth will be rapid.

Tank mixing this product with other registered herbicides is recommended, especially if hydrilla is approaching maturity or biomass is heavy.

Subsurface Application Rates

Water Depth (feet)	Pints of This Product Required Per Surface Acre to Achieve Desired Water Concentration		
	200 ppb	300 ppb	400 ppb
1	1.1	1.6	2.1
2	2.1	3.2	4.2
3	3.2	4.8	6.4
4	4.2	6.4	8.5
5	5.3	8.0	10.6

Example: to achieve an initial concentration of 200 ppb of flumioxazin in a 4 foot deep water column, apply 4.2 pints of this product per surface acre.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE

Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not contaminate food or foodstuffs. Do not store or transport near feed or food. Not for use or storage in or around the home. For help with any spill, leak, fire or exposure involving this material, call day or night **CHEMTREC (800) 424-9300.**

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:

[**Note to Reviewer:** The following statement will be included on all Final Printed Labels bearing multiple Container Disposal (Container Handling) statements] "**NOTE:** This product is available in multiple containers. Refer to the Net Contents section of this products labeling for the applicable "No refillable" or "Refillable" designation. Follow the container disposal [handling] instructions below that apply to your container type / size."

[**Note to Reviewer:** The bracketed section headers will be included when multiple container types / sizes are listed on the label.]

[Nonrefillable Containers 5 gallons or less:] 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 or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

[Nonrefillable containers larger than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure 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. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

[Refillable containers larger 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 refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

LIMITATION OF LIABILITY

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR FOR DAMAGES IN THEIR NATURE OF PENALTIES RELATING TO THE GOODS SOLD, INCLUDING USE, APPLICATION, HANDLING, AND DISPOSAL. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER OR SELLER SHALL NOT BE LIABLE TO BUYER OR USER BY WAY OF

INDEMNIFICATION TO BUYER OR TO CUSTOMERS OF BUYER, IF ANY, OR FOR ANY DAMAGES OR SUMS OF MONEY, CLAIMS OR DEMANDS WHATSOEVER, RESULTING FROM OR BY REASON OF, OR RISING OUT OF THE MISUSE, OR FAILURE TO FOLLOW LABEL WARNINGS OR INSTRUCTIONS FOR USE, OF THE GOODS SOLD BY MANUFACTURER OR SELLER TO BUYER. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER, USER, OR ITS CUSTOMERS. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S OR USER'S EXCLUSIVE REMEDY, AND MANUFACTURER'S OR SELLER'S TOTAL LIABILITY SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.

If you do not agree with or do not accept any of the directions for use, the warranty disclaimers, or limitations on liability, do not use the product, and return it unopened to the Seller, and the purchase price will be refunded.

 RVmmddyy

Optional Marketing Claims:

Nufarm Grow a better tomorrow
Grow a better tomorrow
Patent Pending

[SUBPART 2]

[PANTHER SC HERBICIDE – IVM]
~~[LOCK DOWN SC HERBICIDE – IVM]~~

[For use in Non-crop and Industrial Vegetation Management Market Segment]
[Patent Pending]

[SUBPART 2]

GROUP 14 HERBICIDE

PANTHER™ SC – IVM

HERBICIDE

ABN: ~~LOCK DOWN SC HERBICIDE~~

FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS, †CONIFER AND POPLAR RE-FORESTATION SITES

ACTIVE INGREDIENT:	
Flumioxazin*……	41.4%
OTHER INGREDIENTS: ……	58.6%
TOTAL: ……..	100.0%

*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

Panther SC contains 4 pounds flumioxazin per gallon.

†*Not for use in CA*

[For ≤ 5 Gallon Containers:] [Shake Well Before Use]
[For > 5 Gallon Containers:] [Shake Well, Agitate or Recirculate Before Use]

KEEP OUT OF REACH OF CHILDREN

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 [NEXT PAGE] [BELOW] FOR ADDITIONAL PRECAUTIONARY STATEMENTS

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300
For Medical Emergencies Only, Call (877) 325-1840

EPA REG. NO. 71368-114
EPA EST. NO.

MANUFACTURED FOR
NUFARM INC.
11901 S. AUSTIN AVE.
ALSIP, IL 60803

Nufarm

NET CONTENTS:

[Designation as "NONREFILLABLE" or "REFILLABLE" for containers ≥ 5 GAL]

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing.

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 1-877-325-1840 for emergency medical treatment information.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some of the materials that are chemical-resistant to this product are listed below.

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- chemical-resistant gloves made of any waterproof material
- shoes and socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are 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/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

If not used in accordance with directions on the label, this product is toxic to non-target plants and aquatic invertebrates. For terrestrial uses: Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to non-target plants and aquatic organisms in water adjacent to treated areas. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This pesticide is toxic to plants. Use strictly in accordance with the drift and run-off precautions on this label in order to minimize off-site exposures.

Under some conditions this product may have a potential to run off to surface water or adjacent land. Where possible, use methods which reduce soil erosion, including no till, limited till and contour plowing; these methods also reduce pesticide run-off. Use of vegetation filter strips along rivers, creeks, streams, wetlands or on the downhill side of fields where run-off could occur will minimize water run-off.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

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

Read the entire label before using this product. Use strictly in accordance with label precautionary statements and directions, and with applicable state and federal regulations.

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.

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 (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural crops on farms, forests, nurseries, or greenhouses.

Keep all unprotected persons out of operating areas, or vicinity where there may be drift.

Do not enter or allow others to enter the treated area until sprays have dried.

RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product must be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift,' and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Nufarm. The Buyer must be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN DO NOT APPLY THIS PRODUCT. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Nufarm shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

See also **WARRANTY DISCLAIMER** and **LIMITATION OF LIABILITY** sections of the label for additional information.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions 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.

PRODUCT INFORMATION

This product is a selective herbicide to maintain bare ground non-crop areas when used in accordance with this label. This product is effective as a preemergence and/or postemergence herbicide for control of selected grass and broadleaf weeds.

This product controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply to moist or wet desirable plant foliage.
- Do not apply within 300 feet of non-dormant pome or stone fruit crops.

USE PRECAUTIONS

- Treatment of powdery, dry soil or light sandy soil, or light sandy soil when there is little to no likelihood of rainfall soon after may result in off target movement and possible damage to actively growing susceptible crops when soil particles are moved by wind or water. Do not apply when these soil and environmental conditions are present.

WEED RESISTANCE MANAGEMENT

This product is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 14 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 this product or other Group 14 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 seedling 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.
- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective and 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 by 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 herbicide with a different mode of action, if available.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action.
- Contact your local sales representative, agricultural dealer, consultant, local extension specialist, applicator, crop advisor, and/or appropriate state agricultural extension service representative for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- Report any incidence of non-performance of this product against a particular weed species to your local sales representative or agricultural dealer.

BEST MANAGEMENT PRACTICES

- Plant into weed-free fields and keep fields as weed-free as possible.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
- Do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Prevent an influx of weeds into the field by managing field borders.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.
- Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.

PREEMERGENCE APPLICATION

Make the preemergence application of this product prior to weed emergence. Moisture is necessary to activate this product for residual weed control. Moisture is needed to move this product into the soil for preemergence weed control. Dry weather following application of this product may reduce effectiveness.

POSTEMERGENCE APPLICATION

For best results, apply this product to actively growing weeds. Applying this product under conditions that do not promote active weed growth will reduce herbicide effectiveness.

Do not apply this product when the weeds are under stress due to drought, excessive water and extremes in temperatures or disease. This product is most effective when applied under sunny conditions at temperatures above 65° F.

This product is rainfast one hour after application. Do not make applications if rain is expected within one hour of application or efficacy may be reduced.

APPLICATION EQUIPMENT

Important: Thoroughly clean spray equipment, including all tanks, hoses, booms, screens and nozzles. **Do not use spray equipment used to apply this product to apply other materials to any desirable plant foliage.** Equipment with this product's residue remaining in the system may result in crop injury to subsequently treated crops.

SPRAYER PREPARATION

Before applying this product, start with clean, well maintained application equipment. Clean the spray tank, as well as all hoses and booms to ensure no residue from the previous spraying operation remains in the sprayer. Some pesticides, including but not limited to the sulfonylurea and phenoxy herbicides, are active at very small amounts and can cause crop injury when applied to susceptible crops. Clean the spray equipment according to the manufacturer's directions for the last product used before the equipment is used to apply this product. If two or more products were tank mixed prior to this product's application, follow the most restrictive cleanup procedure.

MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. Agitate solution. Agitation creates a rippling or rolling action on the water surface.
3. If tank mixing this product with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
4. Add any required adjuvants.
5. Fill spray tank to desired level with water. **Continue agitation until all spray solution has been applied.**
6. Mix only the amount of spray solution that can be applied the day of mixing. Apply this product within 48 hours of mixing.

SPRAYER CLEANUP

If spray equipment is dedicated to herbicide applications, the following steps are to clean the spray equipment:

- Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.

If spray equipment will be used for purposes other than applying herbicides, it must be thoroughly cleaned following application of this product. The following steps must be used to clean the spray equipment:

- Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
- Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
- Top off tank, add suitable commercial spray tank cleaning material, following label directions, or add 1 gallon of 3% household ammonia for every 100 gallons of water, circulate through sprayer for 5 minutes, and then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
- Drain tank completely.
- Add enough clean water to the spray tank to allow all hoses, booms, screens and nozzles to be flushed for 2 minutes.
- Remove all nozzles and screens and rinse them with clean water.

SPRAY DRIFT MANAGEMENT

Do not apply under circumstances where possible drift to unprotected persons or to food, forage or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption can occur.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial or ground applications when the wind velocity favors on-target product deposition. Drift potential is lowest between wind speeds of 2-10 mph. For all non-aerial applications, wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.
- All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.
- For ground boom applications, apply with nozzle height at the lowest boom height which provides uniform coverage and reduces exposure to evaporation and wind.

WEEDS CONTROLLED

When this product is applied preemergence or postemergence at directed rates and weed stages, the following grasses and broadleaf weeds are controlled:

TABLE 1. WEEDS CONTROLLED BY THIS PRODUCT

COMMON NAME	SCIENTIFIC NAME
Alyssum, Hoary	*Berteroa incana*
Amaranth	
Palmer	*Amaranthus palmeri*
Spiny	*Amaranthus spinosus*
American Burnweed	*Erechetities hieracifolia*
Barnyardgrass*	*Echinochloa crus-galli*
Beggarweed, Florida	*Desmodium Tortuosum*
Bittercress, Hairy	*Cardamine hirsute*
Bluegrass, Annual	*Poa annua*
Burclover, California	*Medicago Polymorpha*
Carpetweed	*Mollugo verticillata*
Chamberbitter	*Phyllanthus urinaria*
Chickweed	
Common	*Stellaria media*
Mouseear	*Cerastium vulgatum*
Crabgrass	
Large*	*Digitaria sanguinalis*
Smooth*	*Digitaria ishaemum*
Southern*	*Digitaria ciliaris*
Croton, Tropic	*Ctroton glandulosus* var.*septentrionalis*
Dandelion*	*Taraxacum officinale*
Donfennel	*Eupatorium capillifolium*
Doveweed	*Murdannia nudiflora*
Eclipta	*Eclipta prostrate*
Filaree, Redstem*	*Erodium cicutarium*
Foxtail	
Bristly*	*Setaria verticillata*
Giant*	*Setaria faberi*
Green*	*Setaria viridis*
Yellow*	*Setaria glauca*
Galinsoga, Hairy	*Galinsoga ciliate*
Geranium, Carolina	*Geranium carolinianum*
Goosegrass*	*Eleusine indica*
Groundsel, Common	*Senecio vulgaris*
Groundsel, Tree	*Baccharis halimifolia*
Henbit	*Lamium amplexicaule*
Horseweed*	*Conyza Canadensis*
Indigo, Hairy	*Indigofera hirsute*
Ivy, Ground*	*Glechoma hederacea*
Jimsonweed	*Datura stramonium*
Kochia	*Kochia scoparia*
Kyllinga, Green*	*Kyllinga brevifolia*
Ladysthumb	*Polygonum persicaria*
Lambsquarters, Common	*Chenopodium album*
Lovegrass, California*	*Eragrostis diffusa*
Liverwort	*Marchantia polymorpha*

Mallow	
Common	*Malva neglecta*
Little	*Malva parviflora*
Venice	*Hibiscus trionum*
Marsh Parsley	*Apium leptophyllum*
Mayweed*	*Anthemis cotula*
Morningglory	
Entireleaf	*Ipomoea hederacea* var.*integriuscula*
Ivyleaf	*Ipomoea hederacea*
Red/Scarlet	*Ipomoea coccinea*
Smallflower	*Jacquemontia tamnifolia*
Tall	*Ipomoea purpurea*
Moss	*Bryum* spp.
Mulberry Weed	Fatuoa villosa
Mustard	
Tumble	*Sisymbrium altissimum*
Wild	*Brassica kaber*
Nightshade	
Black	*Solanum nigrum*
Eastern Black	*Solanum ptycanthum*
Hairy	*Solanum sarrachoides*
Northern Willowherb	*Epilobium cillatum*
Panicum	
Fall*	*Panicum dichotomiflorum*
Texas*	*Panicum texanum*
Parsley-Peirt	*Alchemilla arvensis*
Pearlwort, Birdseye*	*Sagina procumbens*
Pennycress, Field	*Thlaspi arvense*
Phyllanthus, Longstalked	*Phyllanthus tenellus*
Pigweed	
Prostrate	*Amaranthus blitoides*
Redroot	*Amaranthus retroflexus*
Smooth	*Amaranthus hybridus*
Tumble	*Amaranthus albus*
Pineapple-weed*	*Matricaria matricarioides*
Plantain	
Broadleaf*	*Plantago major*
Buckhorn*	*Plantago lanceolata*
Poinsettia, Wild	*Euphorbia heterophylla*
Pondweed, Sago	*Potamogeton pectinatus*
Puncturevine	*Tribulus terrestris*
Purslane, Common	*Portulaca oleracea*
Pusley, Florida	*Richardia scabra*
Ragweed	
Common	*Ambrosia artemisiifolia*
Giant	*Ambrosia trifida*
Redmaids	*Calandrinia ciliate*
Redweed	*Melochia corchorifolia*
Rocket, Yellow	*Barbarea vulgaris*
Senna, Coffee	*Cassia occidentalis*
Sesbania, Hemp	*Sesbania exaltata*
Shepherd's-Purse	*Capsella bursa-pastoris*

Sida, Prickly (Teaweed)	*Sida spinosa*
Signalgrass*	*Brachiaria platyphylla*
Smartweed, Pennsylvania	*Polygonum pensylvanicum*
Sowthistle, Annual	*Sonchus oleraceus*
Spiderwort, Tropical	*Commelina benghalensis*
Spurge	
Petty	*Euphorbia peplus*
Prostrate	*Euphorbia humistrata Engelm*
Spotted	*Euphorbia maculate*
Starbur, Bristly*	*Acanthospermum hispidum*
Tassle-flower	*Emilia spp.*
Thistle	
Canada*	*Cirsium arvense*
Russian	*Salsola iberica*
Velvetleaf	*Abutilon theophrasti*
Waterhemp	
Common	*Amaranthus rudis*
Tall	*Amaranthus tuberculatus*
Woodsorrel, Yellow*	*Oxalis stricta*

*Preemergence control only

DIRECTIONS FOR USE
TO MAINTAIN BARE GROUND NON-CROP AREAS

This product, when used as directed, can be used for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed-free. Apply this product only to:

- Bare ground under guard rails, above-ground pipelines, and railroad beds, railroad yards and surrounding areas
- Bare ground in parking and storage areas, plant sites, substations, pumping stations, and tank farms
- Bare ground areas of airports, brick yards, industrial plant sites, lumber yards, military installations, and storage areas
- Bare ground around farm buildings, and along ungrazed fence rows, wind breaks and shelter belts
- Road surfaces, improved roadside areas and gravel shoulders.

Follow all applicable directions as outlined above under Product Information. See Table 1 for a list of broadleaf weeds and grasses controlled by this product.

This product offers residual and postemergence control of susceptible broadleaf and grass weeds as well as additional mode of action to assist in the control of ALS (acetolactate synthase) resistant weeds. The length of residual control is dependent on the rate applied as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase.

PREEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 pound ai per acre) of this product per broadcast acre as a preemergence application. Make preemergence (to weed emergence) applications of this product to a weed free soil surface. Preemergence applications of this product must be completed prior to weed emergence. Moisture is necessary to activate this product on soil for residual weed control. Dry weather following application of this product may reduce effectiveness. However, when adequate moisture is received after dry conditions, this product will control susceptible germinating weeds.

POSTEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 pound ai per acre) of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 quart per acre crop oil concentrate). The addition of an adjuvant enhances this product activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product. Emerged weeds are controlled postemergence with this product, however, translocation of this product within a weed is limited, and control is affected by spray coverage and by the addition of an adjuvant. The most effective postemergence weed control with this product occurs when applied in combination with a surfactant to weeds less than 2 inches in height.

SOIL CHARACTERISTICS

Application of this product to soils with high organic matter and/or high clay content may require higher dosages than with soils with low organic matter and/or low clay content. Application to cloddy seedbeds can result in reduced weed control.

CARRIER VOLUME AND SPRAY PRESSURE

PREEMERGENCE APPLICATION

To ensure uniform coverage, use 10 to 30 gallons of spray solution per acre. Nozzle selection must meet manufacturer's gallonage and pressure directions for preemergence herbicide application.

POSTEMERGENCE APPLICATION
To ensure thorough coverage, use 15 to 30 gallons of spray solution per acre. Use 20 to 30 gallons per acre if dense vegetation or heavy residue is present on the soil surface. Nozzle selection must meet manufacturer's gallonage and pressure directions for postemergence herbicide application.

ADDITIVES

POSTEMERGENCE APPLICATION
When applying this product after weed emergence, mix with an agronomically approved adjuvant. Use a crop oil concentrate which contains at least 15% emulsifiers and 80% oil or a non-ionic surfactant containing at least 80% active ingredient when applying this product as part of a postemergence weed control program. Verify mixing compatibility by a jar test before using.

A spray grade nitrogen source (either ammonium sulfate at 2.0 to 2.5 pounds per acre or a 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to the spray mixture along with a crop oil concentrate or non-ionic surfactant to enhance weed control. The addition of a nitrogen source does not replace the need for crop oil concentrate or non-ionic surfactant.

JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND THIS PRODUCT

When using this product and an adjuvant, including in stale seed bed, layby, hooded/shielded or reduced tillage situations, perform a jar test before mixing commercial quantities of this product, when using this product for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pint of the water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 milliliter of this product to the quart jar for every 3 fl oz of this product per acre being applied (4 mls if 12 fl oz per acre is the desired rate of this product), gently mix until product goes into suspension.
3. Add 60 mls of crop oil to the quart jar or 1 milliliter of non-ionic surfactant if it is being used in place of oil, gently mix.
4. If nitrogen is being used, add 16 mls of the 28 to 32% nitrogen source to the quart jar. If ammonium sulfate is being used, add 19 g AMS to the quart jar in place of the 28 to 32% nitrogen.
5. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
6. An ideal tank mix combination will be uniform. If any of the following conditions are observed question the choice of adjuvant:
    a) Layer of oil or globules on the mixture's surface.
    b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
    c) Clabbering: Thickening texture (coagulated) like gelatin.

APPLICATION EQUIPMENT

Application equipment must be clean and in good repair. Nozzles must be uniformly spaced on boom and frequently checked for accuracy.

BROADCAST APPLICATION
Apply this product, and this product’s tank mixes, with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume.

BAND APPLICATION
When banding, use proportionately less water and this product per acre.

HANDGUN APPLICATION

Applications may also be made using a handgun sprayer. Use a spray volume of at least 40 gallons per acre to insure uniform coverage.

AERIAL APPLICATION

To obtain satisfactory weed control with aerial applications of this product, uniform coverage must be obtained. Do not spray when drift is possible or when wind velocity is more than 10 mph. Avoid spraying this product within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and drift, the following directions must be observed:

Volume Pressure
Use this product in 5 to 10 gallons of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gallons per acre will provide inadequate weed control. Higher gallonage applications provide more consistent weed control.

Nozzle and Nozzle Operation

Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles, including diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0º and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

Adjuvants
Refer to the additive section or the tank mix partner's label for adjuvant specifications.

TANK MIX APPLICATION
In addition to weeds controlled by this product used alone, tank mixtures with other preemergence and postemergence herbicides registered for use in non-crop areas provide a broader spectrum of weed control. This product must be tank mixed with other non-crop herbicides including, but not limited to those products listed below.

TANK MIX COMBINATIONS FOR NON-SELECTIVE VEGETATION CONTROL

2,4-D	hexazinone	picloram
bromacil	imazapic	pramitol
chlorsulfuron	imazapyr	prodiamine
dicamba	metsulfuron-methyl	simazine
diuron	norflurazon	sulfometuron-methyl
clopyralid	oryzalin	tebuthiuron
glyphosate	pendimethalin	triclopyr

IMPORTANT: Completely read and follow the label of any potential tank mix partner. When using tank mixtures, use conditions must be in accordance with the most restrictive of the label limitations and precautions on either herbicide label.

USE RESTRICTIONS
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.

DIRECTIONS FOR USE

†IN CONIFER RE-FORESTATION SITES FOLLOWING TIMBER HARVEST

This product is a preemergence and postemergence herbicide for control of selected grass and broadleaf weeds in conifer re-forestation sites following timber harvest operations. This product may be used as a site preparation treatment prior to transplanting of conifers or as a conifer release treatment after stand establishment.
†*Not for use in CA*

Site Preparation - Application Before Transplanting
Apply 8 to 12 fl oz of this product per acre. Transplant operations must take place at least 3 months after application. To obtain optimal weed control, apply this product before weed emergence or after a burndown herbicide has controlled existing vegetation. If existing weed canopy is less than 40%, this product may be tank mixed with a burndown herbicide to provide preemergence weed control.

Apply this product in at least 10 gallons of water per acre to achieve uniform spray coverage using ground or aerial spray equipment.

Conifer Release Treatments — Applications only within 3 years after transplanting.
Apply 8 to 12 fl oz of this product per acre over the top of trees prior to budbreak in the spring or after dormancy in fall. Do not apply this product over the top of trees after budbreak or needle spotting and defoliation may occur. This product should not affect new growth of trees. See Table 2 for a list of tolerant conifers for over the top treatments.

TANK MIXING — Conifer Release Treatments
Certain liquid formulations of other pesticides may increase the postemergence activity of this product, but may also increase the potential for injury when applied over the top of various plants. Therefore, tank mixtures of these materials with this product may be more injurious than this product applied alone and need to be tested to determine if they can be used safely on a widespread basis.

ADJUVANTS — Conifer Release Treatments
When using as a Conifer Release Treatment, do not mix this product with any adjuvant or fertilizer.

IMPORTANT: When applied as directed, the conifers listed in Table 2 have shown tolerance to this product. However, this product is a very active herbicide. Exercise responsible judgment and caution until familiarity is gained with this product. If a desired conifer species is not listed in Table 2, evaluate the safety of this product on a small number of plants under commercial growing conditions, and monitor plant response for four to six weeks for phytotoxicity. Test this product on a small number of plants to determine if this product can be used safely on a widespread basis. Do not apply this product over the top of conifers until trees have been growing in the treated area for at least one year. The use of nylon mesh wraps, commonly used to deter animal browsing, may increase plant

injury if placed on plants after over the top application of this product.

USE RESTRICTIONS

- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.

TABLE 2. TOLERANT CONIFER TREE SPECIES

COMMON NAME	SCIENTIFIC NAME
Arborvitae	
American	*Thuja occidentalis*
Oriental	*Thuja orientalis*
Fir	
Concolor	*Abies concolor*
Cork Bark	*Abies lasiocarpa*
Douglas	*Pseudotsuga menzesii*
Fraser	*Abies fraseri*
Grand	*Abies grandis*
Noble	*Abies procera*
Turkish	*Abies bommuelleriana*
Hemlock	
Eastern	*Tsuga Canadensis*
Western	*Tusga heterophylla*
Juniper	
Blue Star	*Juniperus scopularum*
Creeping	*Juniperus horizontalis*
Japanese Garden	*Juniperus chinensis*
Tamarix	*Juniperus Sabina*
Pine	
Austrian	*Pinus nigra*
Eastern White	*Pinus strobes*
Jack	*Pinus banksiana*
Japanese Black	*Pinus thunbergiana*
Loblolly	*Pinus taeda*
Lodgepole	*Pinus contorta*
Longleaf	*Pinus palustris*
Mugo	*Pinus mugo*
Ponderosa	*Pinus ponderosa*
Sand	*Pinus clausa*
Scotch	*Pinus sylvestris*
Shortleaf	*Pinus echinata*
Slash	*Pinus elliottii*
Virginia	*Pinus virginiana*
Spruce	
Blue	*Picea pungens*
Dwarf Alberta	*Picea glauca conica*
Norway	*Picea abies*
Sitka	*Picea sitchensis*
Yew	
English	*Taxus baccata*
Japanese	*Taxus cuspidate*

DIRECTIONS FOR USE

†IN POPLAR PLANTATIONS AND TIMBER RE-FORESTATION SITES

This product is a preemergence and postemergence herbicide for control of selected grass and broadleaf weeds in poplar plantations and timber re-forestation sites following timber harvest operations. This product may be used as a site preparation treatment prior to transplanting of trees or as a release treatment after stand establishment.

†*Not for use in CA*

Site Preparation - Application Before Transplanting
Apply 8 to 12 fl oz of this product per acre. Transplant operations must take place at least 3 months after application. To obtain optimal weed control, apply this product before weed emergence or after a burndown herbicide has controlled existing vegetation. If existing weed canopy is less than 40%, this product may be tank mixed with a burndown herbicide to provide preemergence weed control.

Apply this product in at least 10 gallons of water per acre to achieve uniform spray coverage using ground or aerial spray equipment.

Release Treatments — Applications Within 3 Years After Transplanting
Apply 8 to 12 fl oz of this product per acre over the top of trees prior to budbreak in the spring or after dormancy in fall. Do not apply this product over the top of trees after budbreak or leaf spotting and defoliation may occur. This product should not affect new growth of trees of tolerant poplars for over the top treatments.

TANK MIXING — Poplar Release Treatments
Certain liquid formulations of other pesticides may increase the postemergence activity of this product, but may also increase the potential for injury when applied over the top of various plants. Therefore, tank mixtures of these materials with this product may be more injurious than this product applied alone and need to be tested to determine if they can be used safely on a widespread basis.

ADJUVANTS — Poplar Release Treatments
When applying Release Treatments, do not mix this product with any adjuvant or fertilizer.

IMPORTANT: When applied as directed, poplars *(Populus balsamifera, P. niger and P. tremuloides),* hybrid poplars *(P.* sp. x sp.), and cottonwoods *(P. deltoids and P. trichocarpa)* have shown tolerance to this product. However, this product is a very active herbicide. Exercise responsible judgment and caution until familiarity is gained with this product. Test this product on a small number of plants to determine if this product can be used safely on a widespread basis. Do not apply this product over the top unless trees are more than one year old.

USE RESTRICTIONS

- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE

Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not contaminate food or foodstuffs. Do not store or transport near feed or food. Not for use or storage in or around the home. For help with any spill, leak, fire or exposure involving this material, call day or night **CHEMTREC (800) 424-9300.**

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:

[**Note to Reviewer:** The following statement will be included on all Final Printed Labels bearing multiple Container Disposal (Container Handling) statements] "**NOTE:** This product is available in multiple containers. Refer to the Net Contents section of this products labeling for the applicable "No refillable" or "Refillable" designation. Follow the container disposal [handling] instructions below that apply to your container type / size."

[**Note to Reviewer:** The bracketed section headers will be included when multiple container types / sizes are listed on the label.]

[Nonrefillable Containers 5 gallons or less:] Nonrefillable container. Do not reuse or refill this container. **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 or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

[Nonrefillable containers larger than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure 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. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

[Refillable containers larger 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 refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

LIMITATION OF LIABILITY

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR FOR DAMAGES IN THEIR NATURE OF PENALTIES RELATING TO THE GOODS SOLD, INCLUDING USE, APPLICATION, HANDLING, AND DISPOSAL. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER OR SELLER SHALL NOT BE LIABLE TO BUYER OR USER BY WAY OF INDEMNIFICATION TO BUYER OR TO CUSTOMERS OF BUYER, IF ANY, OR FOR ANY DAMAGES OR SUMS OF MONEY, CLAIMS OR DEMANDS WHATSOEVER, RESULTING FROM OR BY REASON OF, OR RISING OUT OF THE MISUSE, OR

FAILURE TO FOLLOW LABEL WARNINGS OR INSTRUCTIONS FOR USE, OF THE GOODS SOLD BY MANUFACTURER OR SELLER TO BUYER. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER, USER, OR ITS CUSTOMERS. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S OR USER'S EXCLUSIVE REMEDY, AND MANUFACTURER'S OR SELLER'S TOTAL LIABILITY SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.

If you do not agree with or do not accept any of the directions for use, the warranty disclaimers, or limitations on liability, do not use the product, and return it unopened to the Seller, and the purchase price will be refunded.

 RVmmddyy

Optional Marketing Claims:

Nufarm Grow a better tomorrow
Grow a better tomorrow

[SUBPART3]

[PANTHER SC – NON CROP HERBICIDE]
[ABN: SureGuard SC Herbicide – T&O]

[SUBPART3]

GROUP 14 HERBICIDE

PANTHER™ SC – NON CROP
HERBICIDE

[ABN: SureGuard SC Herbicide – T&O] [ABN: LOCK DOWN SC HERBICIDE]
[FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS]
[FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS, † CONIFER AND POPLAR RE-FORESTATION SITES]
[FOR USE IN CONTAINER AND FIELD GROWN CONIFERS (INCLUDING CHRISTMAS TREES) AND DECIDUOUS TREES, AROUND ESTABLISHED WOODY ORNAMENTALS IN LANDSCAPES AND MAINTAIN NON-CROP AREAS AND DORMANT BERMUDAGRASS]

ACTIVE INGREDIENT:	
Flumioxazin*……	41.4%
OTHER INGREDIENTS: ……	58.6%
TOTAL: ……..	100.0%

*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

Panther SC contains 4 pounds flumioxazin per gallon.

†*Not for use in CA*

[For ≤ 5 Gallon Containers:] [Shake Well Before Use]
[For > 5 Gallon Containers:] [Shake Well, Agitate or Recirculate Before Use]

KEEP OUT OF REACH OF CHILDREN

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] [NEXT PAGE] FOR ADDITIONAL PRECAUTIONARY STATEMENTS

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300
For Medical Emergencies Only, Call (877) 325-1840

EPA REG. NO. 71368-114
EPA EST. NO.

MANUFACTURED FOR
NUFARM INC.
11901 S. AUSTIN AVE.
ALSIP, IL 60803

Nufarm

NET CONTENTS:
[Designation as "NONREFILLABLE" or "REFILLABLE" for containers ≥ 5 GAL]

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing.

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 1-877-325-1840 for emergency medical treatment information.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some of the materials that are chemical-resistant to this product are listed below.

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- chemical-resistant gloves made of any waterproof material
- shoes and socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are 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/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

If not used in accordance with directions on the label, this product is toxic to non-target plants and aquatic invertebrates. For terrestrial uses: 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 apply directly to treated, finished drinking water reservoirs or drinking water receptacles when water is intended for human consumption. Drift and runoff may be hazardous to non-target plants and aquatic organisms in water adjacent to treated areas. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This pesticide is toxic to plants. Use strictly in accordance with the drift and run-off precautions on this label in order to minimize off-site exposures.

Treatment of aquatic weeds can result in oxygen loss from decomposition of dead weeds. This loss can cause fish suffocation. Therefore, to minimize this hazard, treat 1/3 to 1/2 of the water area in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State agency with primary responsibility for regulating pesticides before applying to public waters to determine if a permit is needed.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

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

Read the entire label before using this product. Use strictly in accordance with label precautionary statements and directions, and with applicable state and federal regulations.

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 (WPS), 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 (REI). The requirements in this box only apply to users 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, including plants, soil or water is: coveralls, chemical resistant gloves made of waterproof material, shoes plus socks.

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 (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural crops on farms, forests, nurseries, or greenhouses.

Keep all unprotected persons out of operating areas, or vicinity where there may be drift.

Do not enter or allow others to enter the treated area until sprays have dried.

RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product must be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift,' and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Nufarm. The Buyer must be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN DO NOT APPLY THIS PRODUCT. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Nufarm shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

See also **WARRANTY DISCLAIMER** and **LIMITATION OF LIABILITY** sections of the label for additional information.

PRODUCT INFORMATION

This product is a fast acting contact herbicide for use in the management of undesirable aquatic vegetation in slow moving or quiescent waters, to maintain non-crop areas, conifer and poplar re-forestation sites, container and field grown conifers (including Christmas trees) and deciduous trees, around established woody ornamentals in landscapes and dormant Bermudagrass.

This product is also effective as a preemergence and/or postemergence herbicide for control of selected grass and broadleaf weeds.

This product controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide.

This product may cause spotting or speckling on foliage if the spray solution directly contacts actively growing plant foliage or green bark. Leaves that receive indirect (drift) spray contact may be affected in a similar manner. Translocation of this product is limited, and under most conditions established and vigorously growing woody ornamentals will rapidly outgrow any injury symptoms. **However, direct application to actively growing foliage can cause severe injury or death with sensitive ornamental plant species, especially in herbaceous bedding plants and flowers.**

IMPORTANT: When applied as directed, plants listed on this label have shown tolerance to this product. However, this product is a very active herbicide. Exercise responsible judgment and caution until familiarity is gained with this product. Due to variability within species, crop growth stage, environmental conditions and application techniques, it is directed that users test this product under local growing conditions on a small number of plants and evaluate for 4 to 6 weeks for phytotoxicity. Testing this product on a small number of plants will determine if the herbicide can be used safely on a widespread application. Neither the seller nor the manufacturer of this product has investigated the safety to plants not listed on the label.

WEED RESISTANCE MANAGEMENT

This product is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 14 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 this product or other Group 14 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 seedling 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.
- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective and 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 by 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 herbicide with a different mode of action, if available.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action.
- Contact your local sales representative, agricultural dealer, consultant, local extension specialist, applicator, crop advisor, and/or appropriate state agricultural extension service representative for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- Report any incidence of non-performance of this product against a particular weed species to your local sales representative or agricultural dealer.

BEST MANAGEMENT PRACTICES

- Plant into weed-free fields and keep fields as weed-free as possible.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
- Do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Prevent an influx of weeds into the field by managing field borders.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.
- Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.

PREEMERGENCE APPLICATION

Make the preemergence application of this product prior to weed emergence. Moisture is necessary to activate this product for residual weed control. Moisture is needed to move this product into the soil for preemergence weed control. Dry weather following application of this product may reduce effectiveness. However, when adequate moisture is received after dry conditions, this product will control susceptible germinating weeds.

When adequate moisture is not received soon after this product is applied to soil, weed control may be improved by using shallow cultivation. If weeds begin to emerge, irrigate (1/2” of water) or cultivate uniformly with shallow tillage equipment that will not damage the crop. Deep cultivation reduces the effectiveness of this product.

POSTEMERGENCE APPLICATION
For best results, apply this product to actively growing weeds. The most effective postemergence weed control with this product occurs when applied in combination with a surfactant to weeds less than 2 inches in height. Applying this product under conditions that do not promote active weed growth will reduce herbicide effectiveness. Do not apply this product when the weeds are under stress due to drought, excessive water and extremes in temperatures or disease. This product is most effective when applied under sunny conditions at temperatures above 65° F. This product is rainfast one hour after application. Do not make applications if rain is expected within one hour of application or efficacy may be reduced.

SOIL CHARACTERISTICS
Application of this product to soils with high organic matter and/or high clay content may require higher dosages than with soils with low organic matter and/or low clay content. Application to cloddy seedbeds can result in reduced weed control.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions 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.

TANK MIX APPLICATION
In addition to weeds controlled by this product used alone, tank mixtures with other herbicides provides a broader spectrum of weed control. This product can be tank mixed with other herbicides including, but not limited to those products listed below.

TANK MIX COMBINATIONS FOR NON-SELECTIVE VEGETATION CONTROL

2,4-D	hexazinone	picloram
bromacil	imazapic	pramitol
chlorsulfuron	imazapyr	prodiamine
dicamba	metsulfuron-methyl	simazine
diuron	norflurazon	sulfometuron-methyl
clopyralid	oryzalin	tebuthiuron
glyphosate	pendimethalin	Triclopyr

†**Tank Mixing – Conifer and Poplar Release Treatments**
Certain liquid formulations of other pesticides may increase the postemergence activity of this product, but may also increase the potential for injury when applied over the top of various plants. Therefore, tank mixtures of these materials with this product may be potential for injury when applied over the top of various plants. Therefore, tank mixtures of these materials with this product may be more injurious than this product applied alone and need to be tested to determine if they can be used safely on a widespread basis.
†*Not for use in CA*

Tank Mixing - Container and Field Grown Conifers
This product may be tank mixed with products containing the following active ingredients labeled for use in conifers:

clethodim
glyphosate*
oryzalin
prodiamine
simazine*

*Do not apply glyphosate or simazine to containerized ornamentals.

Tank Mixing - Field and Container Grown Deciduous Trees
This product may be tank mixed with products containing the following active ingredient labeled for use in deciduous trees:

clethodim
glyphosate*
metolachlor
oryzalin
pendimethalin
prodiamine
simazine*

*Do not apply glyphosate or simazine to containerized plants.

Tank Mixing - With Other Turfgrass Herbicides

This product may be tank mixed with Manor Herbicide (metsulfuron-methyl).

SPRAY 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 is responsible for considering all these factors when making decisions.

Do not spray this product under circumstances where spray droplets may drift on to unprotected persons, or plantings of food, forage or crops that might be damaged, or rendered unfit for sale, use or consumption. These precautions are not applicable for subsurface injection by closed systems.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial, ground or watercraft-based surface applications when wind velocity favors on-target product deposition. Apply only when the wind speed is less than or equal to 10 mph. For all non-aerial applications, wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Low humidity and high temperatures increase the evaporation rate of spray droplets, and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.

Properly maintain and calibrate all aerial, ground and water based application equipment.

Where states have more stringent regulations, observe them.

APPLICATION AND SPRAYER INFORMATION

Apply this product with sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume. Apply by backpack or handgun sprayer, airboat, helicopter, airplane, or other application equipment that will ensure thorough coverage of plant foliage. **Important:** Thoroughly clean spray equipment, including all tanks, hoses, booms, screens and nozzles. **Do not use spray equipment used to apply this product to apply other materials or to any desirable plant foliage.** Equipment with this product's residue remaining in the system may result in crop injury to subsequently treated crops.

BROADCAST APPLICATION

Apply this product, and this product's tank mixes, with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume.

BAND APPLICATION

When banding, use proportionately less water and this product per acre.

HANDGUN APPLICATION

Applications may also be made using a handgun sprayer. Use a spray volume of at least 40 gallons per acre to insure uniform coverage.

BACKPACK APPLICATION

When applying this product with a backpack sprayer follow all above restrictions. Calibrate backpack sprayers to deliver 1 gallon of spray solution per 500 to 1,000 square feet.

Mixing Rate for This Product in 1 Gallon of Spray Solution for Backpack Applications

Application Volume	Rate (fl oz/A)	Fl oz to Mix in 1 gal Water	Teaspoons to Mix in 1 gal Water	Mls to Mix in 1 gal Water
1 gal per 500 sq ft (87 GPA)	8	0.09	0.6	2.7
	10	0.11	0.7	3.4
	12	0.14	0.8	4.1
1 gal per 750 sq ft (65 GPA)	8	0.14	0.8	4.1
	10	0.17	1	5.1
	12	0.21	1.2	6.1
	8	0.18	1.1	5.3

1 gal per 1,000 sq ft (44 GPA)	10	0.23	1.4	6.8
	12	0.27	1.6	8.1

Example: Applicator wants to spray 1 gallon of this product solution per 1,000 square feet of ground bed at a rate of 12 fl oz/A. Mix 0.27 fl oz (1.6 teaspoons or 8.1 mls) of this product in 1 gallon of water.

AERIAL APPLICATION
To obtain satisfactory weed control, aerial application of this product, must provide uniform coverage of surface weeds and sufficient contact time. When applied by air, this product may not provide adequate control of some submersed weeds. Do not apply by air when significant drift on to non-target plants may occur or when wind velocity is more than 10 mph. Avoid spraying this product within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and avoid drift, the following directions must be observed:

Volume and Pressure
Apply this product in a minimum of 5 gallons of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gallons per acre may not provide adequate weed control. Higher gallonage applications provide more consistent weed control.

Nozzles and Nozzle Operation
Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles including diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0° and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

SPRAYER PREPARATION
Before applying this product, start with clean, well maintained application equipment. Clean the spray tank, as well as all hoses and booms to ensure no residue from the previous spraying operation remains in the sprayer. Some pesticides, including but not limited to the sulfonylurea and phenoxy herbicides, are active at very small amounts and can cause crop injury when applied to susceptible crops. Clean the spray equipment according to the manufacturer's directions for the last product used before the equipment is used to apply this product. If two or more products were tank mixed prior to this product's application, follow the most restrictive cleanup procedure.

Mixing Instructions
- Mix with water having pH of 5 to 7. If pH is higher than 7, use an appropriate buffer to reduce pH to desirable range.
- Fill clean spray tank 1/2 full of desired level with water and add buffering agent if necessary.
- Add the required amount of this product to the spray tank while agitating.
- Fill spray tank to desired level with water. Ensure that this product is thoroughly mixed before making applications. Continue agitation until spray solution has been applied.
- If tank mixing this product with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions.
- Mix the amount of spray solution that can be applied the day of mixing. Apply this product within 48 hours of mixing.

CARRIER VOLUME AND SPRAY PRESSURE

PREEMERGENCE APPLICATION
To ensure uniform coverage, use 10 to 40 gallons of spray solution per acre. When making backpack applications, apply 50 to 100 gallons of spray solution per acre. Nozzle must meet manufacturer's gallonage and pressure directions for preemergence herbicide application.

POSTEMERGENCE APPLICATION
To ensure thorough coverage, use 15 to 30 gallons of spray solution per acre. Use 20 to 30 gallons per acre if dense vegetation or heavy residue is present on the soil surface. When applying with a backpack sprayer, apply 1 gallon of spray solution per 500 to 1,000 square feet. Nozzle selection must meet manufacturer's gallonage and pressure directions for postemergence herbicide application.

ADDITIVES
When applying this product to the foliage of floating or emerged aquatic weeds, mix with an adjuvant approved for use in aquatic sites. Follow adjuvant manufacturer's label rates. Verify mixing compatibility by a jar test before using.

When applying this product after weed emergence in terrestrial settings, mix with an agronomically approved adjuvant. A non-ionic surfactant containing at least 80% active ingredient must be used when applying this product as part of a postemergence weed control program. Verify mixing compatibility by a jar test before using.

ADJUVANTS
Refer to the additive section or the tank mix partners label for adjuvant specifications.
When applying Release Treatments, do not mix this product with any adjuvant or fertilizer.

JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND THIS PRODUCT

Perform a jar test before mixing commercial quantities of this product, when using this product for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pint of the water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 milliliter of this product to the quart jar for every 3 fl oz of this product per acre being applied (4 ml if 12 fl oz per acre is the desired rate of this product), gently mix until product goes into suspension.
3. Add 1 milliliter of non-ionic surfactant or 60 millimeter of crop oil concentrate, gently mix.
4. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
5. An ideal tank mix combination will be uniform. If any of the following conditions are observed question the choice of adjuvant :

    a) Layer of oil or globules on the mixture's surface.

    b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.

    c) Clabbering: Thickening texture (coagulated) like gelatin.

SPRAYER CLEANUP
If spray equipment is dedicated to herbicide applications, the following steps are to clean the spray equipment:

- Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.

If spray equipment will be used for purposes other than applying herbicides, it must be thoroughly cleaned following application of this product. The following steps must be used to clean the spray equipment:

1. Completely drain the spray tank and rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank with clean water and household ammonia. Use 1 gallon of 3% household ammonia for every 100 gallons of water.
4. Circulate through sprayer for 5 minutes.
5. Then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
6. Loosen any diaphragms before flushing the spray system, allowing cleaning solution to spray through the open diaphragm.
7. Drain tank completely.
8. Add enough clean water to the spray tank to flush hoses, booms, screens and nozzles for 2 minutes.
9. Remove all nozzles and screens and rinse them with clean water.

WEEDS CONTROLLED

When this product is applied preemergence or postemergence at directed rates and weed stages, the following grasses and broadleaf weeds are controlled:

TABLE 1 – WEEDS CONTROLLED	
COMMON NAME	**SCIENTIFIC NAME**
Alyssum, Hoary	*Berteroa incana*
Amaranth	
Palmer	*Amaranthus palmeri*
Spiny	*Amaranthus spinosus*
American Burnweed	*Erechetities hieracifolia*
Barnyardgrass*	*Echinochloa crus-galli*
Beggarweed, Florida	*Desmodium Tortuosum*
Bittercress, Hairy	*Cardamine hirsute*
Bluegrass, Annual	*Poa annua*
Burclover, California	*Medicago Polymorpha*
Carpetweed	*Mollugo verticillata*
Chamberbitter	*Phyllanthus urinaria*
Chickweed	
Common	*Stellaria media*
Mouseear	*Cerastium vulgatum*
Crabgrass	
Large*	*Digitaria sanguinalis*
Smooth*	*Digitaria ishaemum*
Southern*	*Digitaria cilaris*
Croton, Tropic	*Croton glandulosus var. septentrionalis*
Dandelion*	*Taraxacum officinale*
Dogfennel	*Eupatorium capillifolium*
Doveweed	*Murdannia nudiflora*
Eclipta	*Eclipta prostrate*
Filaree, Redstem*	*Erodium cicutarium*
Foxtail	
Bristly*	*Setaria verticillata*
Giant*	*Setaria faberi*
Green*	*Setaria viridis*

Yellow*	*Setaria glauca*
Galinsoga, Hairy	*Galinsoga ciliate*
Geranium, Carolina	*Geranium carolinianum*
Goosegrass*	*Eleusine indica*
Groundsel, Common	*Senecio vulgaris*
Groundsel, Tree	*Bachharis halimifolia*
Henbit	*Lamium amplexicaule*
Horseweed*	*Conyza Canadensis*
Indigo, Hairy	*Indigofera hirsute*
Ivy, Ground*	*Glechoma hederacea*
Jimsonweed	*Datura stramonium*
Kochia	*Kochia scoparia*
Kyllinga, Green*	*Kyllinga brevifolia*
Ladysthumb	*Polygonum persicaria*
Lambsquarters, Common	*Chenopodium album*
Lovegrass, California*	*Eragrostis diffusa*
Liverwort	*Marchantia polymorpha*
Mallow	
Common	*Malva neglecta*
Little	*Malva parviflora*
Venice	*Hibiscus trionum*
Marsh Parsley	*Apium leptophyllum*
Mayweed*	*Anthemis cotula*
Morningglory	
Entireleaf	*Ipomoea hederacea var. integriuscula*
Ivyleaf	*Ipomoea hederacea*
Red/Scarlet	*Ipomoea coccinea*
Smallflower	*Jacquemontia tamnifolia*
Tall	*Ipomoea purpurea*
Moss	*Bryum* spp.
Mulberry Weed	*Fatuoa villosa*
Mustard	
Tumble	*Sisymbrium altissimum*
Wild	*Brassica kaber*
Nightshade	
Black	*Solanum nigrum*
Eastern Black	*Solanum ptycanthum*
Hairy	*Solanum sarrachoides*
Northern Willowherb	*Epilobium cillatum*
Panicum	
Fall*	*Panicum dichotomiflorum*
Texas*	*Panicum texanum*
Parsley-Peirt	*Alchemilla arvensis*
Pearlwort, Birdseye*	*Sagina procumbens*
Pennycress, Field	*Thlaspi arvense*
Phyllanthus, Longstalked	*Phyllanthus tenellus*
Pigweed	
Prostrate	*Amaranthus blitoides*
Redroot	*Amaranthus retroflexus*
Smooth	*Amaranthus hybridus*
Tumble	*Amaranthus albus*
Pineapple-weed*	*Matricaria matricarioides*
Plantain	
Broadleaf*	*Plantago major*
Buckhorn*	*Plantago lanceolata*
Pointsettia, Wild	*Euphorbia heterophylla*
Pondweed, Sago	*Potamogeton pectinatus*
Puncturevine	*Tribulus terrestris*
Purslane, Common	*Portulaca oleracea*
Pusley, Florida	*Richardia scabra*
Ragweed	
Common	*Ambrosia artemisiifolia*
Giant	*Ambrosia trifida*
Redmaids	*Calandrinia ciliate*
Redweed	*Melochia corchorifolia*
Rocket, Yellow	*Barbarea vulgaris*
Senna, Coffee	*Cassia occidentalis*
Sesbania, Hemp	*Sesbania exaltata*

Shepherd's-Purse	*Capsella burse-pastoris*
Sida, Prickly (Teaweed)	*Sida spinosa*
Signalgrass*	*Brachiaria platyphylla*
Smartweed, Pennsylvania	*Polygonum pensylvanicum*
Sowthistle, Annual	*Sonchus oleraceus*
Spiderwort, Tropical	*Commelina benghalensis*
Spurge	
Petty	*Euphorbia peplus*
Prostrate	*Euphorbia humistrata Engelm*
Spotted	*Euphorbia maculate*
Starbur, Bristly*	*Acanthospermum hispidum*
Tassle-flower	*Emilia* spp.
Thistle	
Canada*	*Cirsium arvense*
Russian	*Salsola iberica*
Velvetleaf	*Abutilon theophrasti*
Waterhemp	
Common	*Amaranthus rudis*
Tall	*Amaranthus tuberculatus*
Woodsorrel, Yellow*	*Oxalis stricta*

**Preemergence control only*

AQUATIC WEED CONTROL

This product may be applied to the following quiescent or slow moving bodies of water:

- Bayous
- Canals
- Drainage ditches
- Lakes
- Marshes
- Ponds (including golf course ponds)
- Reservoirs

This product is most effective when applied to young, actively growing weeds in water with a pH of less than 8.5. Application of this product to public aquatic areas may require special approval and/or permits. Consult with local state agencies, if required.

USE RESTRICTIONS

- Do not apply to intertidal or estuarine areas.
- Do not exceed 400 ppb of this product during any one application.
- Do not re-treat the same section of water with this product more than 6 times per year.
- Do not retreat the same section of water within 28 days of application, except in areas with dense weed vegetation. In these areas, treat the remaining weeds within 10 to 14 days.
- In high density weed populations only treat 1/2 the water body at one time.
- Treated water may not be used for irrigation purposes on food crops until at least five (5) days after application.
- Do not use in water utilized for crawfish farming.

USE PRECAUTIONS

- There is no post-application holding restriction against use of treated water for drinking or recreational purposes (e.g. swimming, fishing).
- Treated water may be used for irrigation purposes on turf and landscape ornamentals as outlined in the *Irrigation Restrictions Following Application* table.

IRRIGATION RESTRICTIONS FOLLOWING APPLICATION

Application Method	Application Rate	Average Water Depth	Turf and Landscape Ornamentals	Ornamentals grown for production in Greenhouse and Nursery
Surface Spray	6 to 12 oz per surface acre	Greater than 3 feet	None	5 days
		Less than 3 feet	12 hours	5 days
Subsurface	Less than 200 ppb	N/A	1 day	5 days
	200 to 300 ppb	N/A	2 days	5 days
	300 to 400 ppb	N/A	3 days	5 days

DIRECTIONS FOR USE

[SUBPART3]

TO CONTROL FLOATING AND EMERGED WEEDS USING SURFACE APPLICATION

This product will control weeds and algae listed in Table 2 when applied as a broadcast spray with appropriate equipment. For best results, apply this product to the foliage of actively growing weeds.

Table 2. Floating and Emerged Weeds

Common Name	Scientific Name
Alligator Weed	*Alternanthera philoxeroides*
Duckweed*	*Lemna* spp.
Frog's-bit	*Limnobium spongia*
Mosquito Fern	*Azolla* spp.
Water Fern	*Salvinia* spp.
Water Lettuce	*Pistia stratiotes*
Watermeal*	*Wolffia* spp.
Water Pennywort	*Hydrocotyle* spp.
Filamentous algae	*Pithophara*
Filamentous algae	*Cladophora*

* Coverage is essential for effective duckweed and watermeal control. Any duckweed and/or watermeal escapes left in the water column will quickly re-infest the water body. Apply 200 ppb concentration throughout the water body to control duckweed and watermeal.– see **DIRECTIONS FOR USE TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS** section for additional application information.

Surface Application
Apply this product as a broadcast spray at 6 to 12 fl oz of formulated product per acre plus an adjuvant approved for use in aquatics.

This product is a contact herbicide that quickly degrades in the water column so plants that do not initially come in contact with the herbicide will not be controlled. Apply this product in a minimum of 30 gallons of water per acre to all areas of the water body where weeds exist. Coverage is essential for effective control as all floating weeds need to be exposed to lethal concentrations in all parts of the water body. Any untreated escapes or re-introductions of plants that were not treated will reestablish in areas where surface weeds had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

Application of this product during early morning hours may enhance weed control. When applying to densely packed actively growing surface weeds, ensure adequate coverage. Rapid decomposition of vegetation resulting from herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat floating surface weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with 2,4-D, diquat, glyphosate or other registered foliar applied herbicides for enhanced control of floating and emergent weeds.

Consult a manufacturer's label for specific rate restrictions and weeds controlled. Always follow the most restrictive label restrictions and precautions for all products used when making an applications involving tank mixes.

DIRECTIONS FOR USE
TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS

This product will control submersed and floating weeds listed in Table 3, *Submersed and Floating Weeds Controlled by Subsurface Application*, when applied subsurface with appropriate equipment.

Table 3. Submersed and Floating Weeds Controlled by Subsurface Application

Common Name	Scientific Name
Coontail	*Ceratophyllum demersum*
Duckweed	*Lemna* spp.
Fanwort	*Cabomba caroliniana*
Hydrilla	*Hydrilla verticillata*
Hygrophila	*Hygrophila polysperma*
Naiad, Southern	*Najas guadalupensis*
Pondweed, Curlyleaf	*Potamogeton crispus*
Pondweed, Sago	*Potamogeton pectinatus*
Pondweed, Variable-Leaf	*Potamogeton diversifolius*
Water Fern	*Salvinia* spp.
Water Lettuce	*Pistia stratiotes*

Watermeal	*Wolffia* spp.
Watermilfoil, Eurasian	*Myriophyllum spicatum*
Watermilfoil, Variable-Leaf	*Myriophyllum heterophyllum*

Subsurface Treatment
Apply this product at a rate that will produce an initial concentration of 200 to 400 ppb (of active ingredient flumioxazin) in the water column.

This product is rapidly absorbed by target plants, but also breaks down quickly in water with a pH greater than 8.5. The pH of water surrounding mats of submersed vegetation can exceed 8.5 by early to mid-day, due to photosynthetic processes. Application of this product under these conditions may provide only partial weed control, and regrowth is likely. For best control, apply this product in a minimum of 30 gallons of water per acre in the early morning to actively growing weeds and early in the season before surface matting occurs. Complete coverage and sufficient contact time of submersed weeds with this product is required for optimal performance. Application of this product with subsurface trailing hoses designed to distribute the herbicide within the plant stand will provide more effective and longer term control of submersed weeds. Use Table 3, *Subsurface Application Rates* to determine the amount of this product needed to achieve desired concentration at different water depths. Use higher concentrations when weed biomass is heavy and/or weeds are more mature and topped out. Any untreated plants that are left in the water column can re-infest treated areas that had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

When applying this product to densely packed actively growing submersed weeds, a rapid decomposition of vegetation resulting from herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat submersed weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with other registered submersed applied herbicides for enhanced control of submersed and floating weeds.

Application Equipment for Water Column Treatment
To improve distribution in the water column and ensure adequate coverage, when possible apply this product with subsurface trailing hoses in order to place the herbicide under the surface and throughout the biomass of aquatic vegetation. Keep swath width to a minimum in order to maximize contact with submersed aquatic vegetation. In small shallow water bodies, surface sprays may be required to apply this product. Apply by backpack or handgun sprayer or other application equipment that will ensure adequate coverage of target plant.

Information on Hydrilla Control in Florida
Apply this product as a subsurface treatment for hydrilla control. For best control of hydrilla apply during the late Winter/early Spring and/or early to late Fall. Efficacy of this product will be enhanced at these timings due to lower potential biomass present and lower pH of the water. If applied to mature topped out hydrilla, this product will cause some discoloration and loss of growing tips, but regrowth will be rapid.

Tank mixing this product with other registered herbicides is recommended, especially if hydrilla is approaching maturity or biomass is heavy.

Subsurface Application Rates

Water Depth (feet)	Pints of This Product Required Per Surface Acre to Achieve Desired Water Concentration		
	200 ppb	300 ppb	400 ppb
1	1.1	1.6	2.1
2	2.1	3.2	4.2
3	3.2	4.8	6.4
4	4.2	6.4	8.5
5	5.3	8.0	10.6

Example: to achieve an initial concentration of 200 ppb of flumioxazin in a 4 foot deep water column, apply 4.2 pints of this product per surface acre.

BARE GROUND NON-CROP AREAS

DIRECTIONS FOR USE

TO MAINTAIN BARE GROUND NON-CROP AREAS

This product, when used as directed, can be used for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed-free. Apply this product only to:

- Bare ground under guard rails, above-ground pipelines, and railroad beds, railroad yards and surrounding areas
- Bare ground in parking and storage areas, plant sites, substations, pumping stations, and tank farms
- Bare ground areas of airports, brick yards, industrial plant sites, lumber yards, military installations, and storage areas
- Bare ground around farm buildings, and along ungrazed fence rows, wind breaks and shelter belts
- Road surfaces, improved roadside areas and gravel shoulders.

This product offers residual and postemergence control of susceptible broadleaf and grass weeds as well as additional mode of action to assist in the control of ALS (acetolactate synthase) resistant weeds. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. The length of residual control is dependent on the rate applied as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply to moist or wet desirable plant foliage.
- Do not apply within 300 feet of non-dormant pome or stone fruit crops.
- Do not re-apply this product within 30 days.

USE PRECAUTIONS

- Treatment of powdery, dry soil or light sandy soil, or light sandy soil when there is little to no likelihood of rainfall soon after may result in off target movement and possible damage to actively growing susceptible crops when soil particles are moved by wind or water. Do not apply when these soil and environmental conditions are present.

PREEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre as a preemergence application. Make preemergence (to weed emergence) applications of this product must be made to a weed free soil surface. Preemergence applications of this product must be completed prior to weed emergence.

POSTEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 quart per acre crop oil concentrate). The addition of an adjuvant enhances this product activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product. Emerged weeds are controlled postemergence with this product, however, translocation of this product within a weed is limited, and control is affected by spray coverage and by the addition of an adjuvant. The most effective postemergence weed control with this product occurs when applied in combination with a surfactant to weeds less than 2 inches in height.

†IN CONIFER RE-FORESTATION SITES FOLLOWING TIMBER HARVEST

DIRECTIONS FOR USE

This product is a preemergence and postemergence herbicide for control of selected grass and broadleaf weeds in conifer re-forestation sites following timber harvest operations. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. This product may be used as a site preparation treatment prior to transplanting of conifers or as a conifer release treatment after stand establishment.

†*Not for use in CA*

Site Preparation - Application Before Transplanting

Apply 8 to 12 fl oz of this product per acre. Transplant operations must take place at least 3 months after application. To obtain optimal weed control, apply this product before weed emergence or after a burndown herbicide has controlled existing vegetation. If existing weed canopy is less than 40%, this product may be tank mixed with a burndown herbicide to provide preemergence weed control.

Apply this product in at least 10 gallons of water per acre to achieve uniform spray coverage using ground or aerial spray equipment.

Conifer Release Treatments — Applications only within 3 years after transplanting.

Apply 8 to 12 fl oz of this product per acre over the top of trees prior to budbreak in the spring or after dormancy in fall. Do not apply this product over the top of trees after budbreak or needle spotting and defoliation may occur. This product should not affect new

growth of trees. See Table 4 for a list of tolerant conifers for over the top treatments.

IMPORTANT: When applied as directed, the conifers listed in Table 4 have shown tolerance to this product. However, this product is a very active herbicide. Exercise responsible judgment and caution until familiarity is gained with this product. If a desired conifer species is not listed in Table 4, evaluate the safety of this product on a small number of plants under commercial growing conditions, and monitor plant response for four to six weeks for phytotoxicity. Test this product on a small number of plants to determine if this product can be used safely on a widespread basis. Do not apply this product over the top of conifers until trees have been growing in the treated area for at least one year. The use of nylon mesh wraps, commonly used to deter animal browsing, may increase plant injury if placed on plants after over the top application of this product.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply to moist or wet desirable plant foliage.
- Do not apply within 300 feet of non-dormant pome or stone fruit crops.
- Do not re-apply this product within 30 days.

USE PRECAUTIONS

- Treatment of powdery, dry soil or light sandy soil, or light sandy soil when there is little to no likelihood of rainfall soon after may result in off target movement and possible damage to actively growing susceptible crops when soil particles are moved by wind or water. Do not apply when these soil and environmental conditions are present.

TABLE 4 - TOLERANT CONIFER TREE SPECIES

COMMON NAME	SCIENTIFIC NAME
Arborvitae	
American	*Thuja occidentalis*
Oriental	*Thuja orientalis*
Fir	
Concolor	*Abies concolor*
Cork Bark	*Abies lasiocarpa*
Douglas	*Pseudotsuga menzesii*
Fraser	*Abies fraseri*
Grand	*Abies grandis*
Noble	*Abies procera*
Turkish	*Abies bommuelleriana*
Hemlock	
Eastern	*Tsuga Canadensis*
Western	*Tusga heterophylla*
Juniper	
Blue Star	*Juniperus scopularum*
Creeping	*Juniperus horizontalis*
Japanese Garden	*Juniperus chinensis*
Tamarix	*Juniperus Sabina*
Pine	
Austrian	*Pinus nigra*
Eastern White	*Pinus strobes*
Jack	*Pinus banksiana*
Japanese Black	*Pinus thunbergiana*
Loblolly	*Pinus taeda*
Lodgepole	*Pinus contorta*
Longleaf	*Pinus palustris*
Mugo	*Pinus mugo*
Ponderosa	*Pinus ponderosa*
Sand	*Pinus clausa*
Scotch	*Pinus sylvestris*
Shortleaf	*Pinus echinata*

Slash	*Pinus elliottii*
Virginia	*Pinus virginiana*
Spruce	
Blue	*Picea pungens*
Dwarf Alberta	*Picea glauca conica*
Norway	*Picea abies*
Sitka	*Picea sitchensis*
Yew	
English	*Taxus baccata*
Japanese	*Taxus cuspidate*

†IN POPLAR PLANTATIONS AND TIMBER RE-FORESTATION SITES

DIRECTIONS FOR USE

This product is a preemergence and postemergence herbicide for control of selected grass and broadleaf weeds in poplar plantations and timber re-forestation sites following timber harvest operations. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. This product may be used as a site preparation treatment prior to transplanting of trees or as a release treatment after stand establishment.

†*Not for use in CA*

Site Preparation - Application Before Transplanting
Apply 8 to 12 fl oz of this product per acre. Transplant operations must take place at least 3 months after application. To obtain optimal weed control, apply this product before weed emergence or after a burndown herbicide has controlled existing vegetation. If existing weed canopy is less than 40%, this product may be tank mixed with a burndown herbicide to provide preemergence weed control.

Apply this product in at least 10 gallons of water per acre to achieve uniform spray coverage using ground or aerial spray equipment.

Release Treatments — Applications Within 3 Years After Transplanting
Apply 8 to 12 fl oz of this product per acre over the top of trees prior to budbreak in the spring or after dormancy in fall. Do not apply this product over the top of trees after budbreak or leaf spotting and defoliation may occur. This product should not affect new growth of trees of tolerant poplars for over the top treatments.

TANK MIXING — Poplar Release Treatments
Certain liquid formulations of other pesticides may increase the postemergence activity of this product, but may also increase the potential for injury when applied over the top of various plants. Therefore, tank mixtures of these materials with this product may be more injurious than this product applied alone and need to be tested to determine if they can be used safely on a widespread basis.

ADJUVANTS — Poplar Release Treatments
When applying Release Treatments, do not mix this product with any adjuvant or fertilizer.

IMPORTANT: When applied as directed, poplars *(Populus balsamifera, P. niger and P. tremuloides),* hybrid poplars *(P.* sp. x sp.), and cottonwoods *(P. deltoids and P. trichocarpa)* have shown tolerance to this product. However, this product is a very active herbicide. Exercise responsible judgment and caution until familiarity is gained with this product. Test this product on a small number of plants to determine if this product can be used safely on a widespread basis. Do not apply this product over the top unless trees are more than one year old.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply to moist or wet desirable plant foliage.
- Do not apply within 300 feet of non-dormant pome or stone fruit crops.
- Do not re-apply this product within 30 days.

USE PRECAUTIONS

- Treatment of powdery, dry soil or light sandy soil, or light sandy soil when there is little to no likelihood of rainfall soon after may result in off target movement and possible damage to actively growing susceptible crops when soil particles are moved

by wind or water. Do not apply when these soil and environmental conditions are present.

TURF & ORNAMENTAL SITES

DIRECTIONS FOR USE

This product is a preemergence and early postemergence herbicide for control of selected grass and broadleaf weeds in and around ornamental woody shrubs, deciduous trees and conifers (including Christmas trees) grown outdoors in containers or in the field (in ground), to maintain non-crop areas and dormant Bermudagrass. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses.

This product controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not apply in enclosed greenhouse structures if plants are present.
- Do not move plants for 24 hours into enclosed greenhouses until the area treated with this product has been watered.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not graze treated fields or hay to livestock.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply when plants are under stress from insects, diseases, animals or winter injury, planting shock or any other stresses.
- Only apply to healthy established trees and ornamentals.

IN ESTABLISHED CONTAINER AND FIELD GROWN CONIFERS (INCLUDING CHRISTMAS TREES)

DIRECTIONS FOR USE

Apply this product as a single or split application to established container and field grown conifers, which includes applications to Christmas tree plantations. The conifers listed in Table 5 have exhibited tolerance to this product only when the product is applied to dormant or hardened off plant material. If applied over the top of plant foliage, apply this product before spring bud break or after conifers have sufficiently hardened off. During periods of cool, cloudy weather, use caution to ensure conifers have hardened off prior to herbicide application. Do not apply to conifers within 1 year of seedling emergence.

PREEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 pound ai per acre) of this product per broadcast acre before weeds emerge. Apply to weed free, established conifers grown in containers or in the field (in ground). If possible, irrigate treated area with 0.5 to 0.75 inch of water immediately following application. This product may be sprayed directly over conifers listed in Table 5, provided bud break has not occurred or plants are hardened off. Needle burn may be observed on new flush if plants are actively growing at time of application. However, this product will typically not effect subsequent growth. If conifers are not dormant or hardened off at time of application, and foliar injury cannot be tolerated, apply this product as a directed spray, taking care to minimize direct contact or drift of sprays onto foliage. Mechanically incorporating this product after application will disturb soil surfaces, which may reduce herbicidal efficacy. When applied before weed germination, this product will control broadleaf and grassy weeds listed in Table 1.

POSTEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre after weeds have emerged. This product may be sprayed directly over conifers listed in Table 5, provided bud break has not occurred or plants are hardened off. Needle burn may be observed on new flush if plants are actively growing at time of application. However, this product will typically not affect subsequent growth. If conifers are not dormant or hardened off at the time of application, and foliar injury cannot be tolerated, apply this product as a directed spray, taking care to minimize direct contact or drift of sprays onto foliage.

If applied when weeds are actively growing and no larger than 2 inches in height, this product will provide postemergence control of broadleaf weeds and grasses listed in Table 1. Postemergence control of this product may be more effective with certain weed species, and may not control mature, stressed or hardened off weeds that are not actively growing at the time of application.

TOLERANT CONIFERS

This product may be applied to the conifer species listed in Table 5. If a desired conifer species is not listed in Table 5, evaluate the safety of this product on a small number of plants under commercial growing conditions, and monitor plant response for four to six weeks for phytotoxicity. Testing this product on a small number of plants will determine if this product can be used safely on a widespread basis.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.

TABLE 5 - TOLERANT CONIFER TREE SPECIES

COMMON NAME	SCIENTIFIC NAME
Arborvitae	
American	*Thuja occidentalis*
Oriental	*Thuja orientalis*
Fir	
Concolor	*Abies concolor*
Cork Bark	*Abies lasiocarpa*
Douglas	*Pseudotsuga menzesii*
Fraser	*Abies fraseri*
Grand	*Abies grandis*
Noble	*Abies procera*
Turkish	*Abies bommuelleriana*
Hemlock	
Eastern	*Tsuga Canadensis*
Western	*Tusga heterophylla*
Juniper	
Blue Star	*Juniperus scopularum*
Creeping	*Juniperus horizontalis*
Japanese Garden	*Juniperus chinensis*
Tamarix	*Juniperus Sabina*
Pine	
Austrian	*Pinus nigra*
Eastern White	*Pinus strobes*
Jack	*Pinus banksiana*
Japanese Black	*Pinus thunbergiana*
Loblolly	*Pinus taeda*
Lodgepole	*Pinus contorta*
Longleaf	*Pinus palustris*
Mugo	*Pinus mugo*
Ponderosa	*Pinus ponderosa*
Sand	*Pinus clausa*
Scotch	*Pinus sylvestris*
Shortleaf	*Pinus echinata*
Slash	*Pinus elliottii*
Virginia	*Pinus virginiana*
Spruce	
Blue	*Picea pungens*
Dwarf Alberta	*Picea glauca conica*
Norway	*Picea abies*
Sitka	*Picea sitchensis*
Yew	
English	*Taxus baccata*
Japanese	*Taxus cuspidate*

DIRECTIONS FOR USE

This product may be applied as single or split applications to container and field grown deciduous trees with an established root system. The deciduous trees listed in Table 3 have exhibited tolerance to this product only when applied to the soil and base of plants. Application of this product to deciduous foliage or green bark may result in unacceptable injury.

This product may be applied to established (or transplanted) container and field grown deciduous trees. Do not apply to trees that are less than one year old or have been transplanted less than one year, unless completely protected by non-porous wraps, grow tubes, waxed protectors or other forms of protection to young foliage and/or bark. Do not harvest fruit or nuts from treated trees within one year of application.

IMPORTANT: Direct application of this product to the soil surface and away from plant foliage and bark. Avoid direct spray contact on plant surfaces, foliage and green bark or injury may result. Application of this product after bud swell may cause injury if herbicide contacts foliage. Avoid application under environmental conditions that favor drift to non-targeted areas.

PREEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre as a preemergence (to weed emergence) application. Apply this product to weed free deciduous trees grown in containers or in the field (in-ground). If possible, irrigate treated area with 0.5 to 0.75 inch of water immediately following application. This product may be applied to the soil surface and base of deciduous trees, provided that direct and indirect (drift) applications to plant foliage, flowers and green bark does not occur. Mechanically incorporating this product will disturb soil surfaces, which may reduce herbicidal efficacy. The use of spray shields that limit exposure of foliage and bark to this product is suggested. When applied before weed germination, this product will control broadleaf and grassy weeds. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses.

POSTEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant). Make postemergence (to weed emergence) applications of this product when weeds are actively growing and are no larger than 2 inches in height. The addition of a surfactant enhances this product activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product. When applied after weed germination, this product will provide preemergence and postemergence control of broadleaf weeds and grasses. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses

Postemergence control of this product may be more effective with certain weed species, and may not control mature, stressed or hardened off weeds that are not actively growing at the time of application.

TOLERANT DECIDUOUS TREES, NON-BEARING FRUIT AND NON-BEARING NUT TREES

This product may be applied as a directed spray to the deciduous, non-bearing fruit and non-bearing nut trees species listed in Table 6. If a desired tree species is not listed in Table 6, evaluate the safety of this product on a small number of plants under commercial growing conditions and monitor plant response for four to six weeks for phytotoxicity. Testing this product on a small number of plants will determine if this product can be used safely on a widespread basis.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.

TABLE 6 – TOLERANT DECIDUOUS TREE SPECIES

COMMON NAME	SCIENTIFIC NAME
Apricot*	*Prunus* spp.
Ash	*Fraxinus* spp.
Birch	*Betula* spp.
Buckeye	*Aesculus* spp.
Cherry*	*Prunus* spp.
Chestnut	*Castanea* spp.
Citrus*	*Citrus* spp.
Dogwood	*Cornus* spp.
Eucalyptus	*Eucalyptus* spp.
Ginkgo	*Ginkgo* spp.
Hawthorn	*Crataegus* spp.
Honeylocust	*Gleditsia* spp.

Larch	*Larix* spp.
Lilac	*Syringa* spp.
Maple**	*Acer* spp.
Myrtle, Crepe	*Lagerstroemia indica*
Oak	*Quercus* spp.
Poplar	*Populus* spp.
Peach*	*Prunus* spp.
Plum*	*Prunus* spp.
Pecan*	*Carya* spp.
Redbud	*Cercis Canadensis*
Sweetgum	*Liquidambar styraciflua*
Sycamore	*Plantanus* spp.
Walnut, Black	*Juglans nigra*
Willow	*Salix* spp.

**Non-bearing trees only.*
***Not for use on maple trees used for production of maple sap or syrup.*

AROUND ESTABLISHED WOODY LANDSCAPE ORNAMENTALS AND TO MAINTAIN NON-CROP AREAS

DIRECTIONS FOR USE

Application of this product in the vicinity of ornamental plants is limited to directed sprays around well established woody shrubs and trees including azalea, euonymus, holly, and the conifers and deciduous trees listed in Tables 5 and 6. This product may also be applied to maintain weed control in non-crop areas in apartment complexes, fence rows, gravel surfaces and driveways, ground mats and pads prior to the addition of containerized plants, golf courses, lumberyards, office complexes, parks, parking areas, recreational sites, schools, sidewalks, storage areas, grass water waterways, rain gardens, and other similar industrial sites. Do not apply this product within any enclosed structure in residential or commercial landscapes.

This product offers postemergence and residual control of susceptible grasses and broadleaf weeds, as well as additional mode of action to assist in the control of resistant weeds. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. The length of residual control is dependent on the rate applied, rainfall and temperature. Length of residual control will decrease as temperature and precipitation increase.

IMPORTANT: Contact with spray or spray drift of this product may cause severe injury or destruction of certain desirable plants, especially herbaceous species including bedding plants or direct seeded annual and perennial flowers. Therefore, do not apply this product over the top of ornamental plants growing in the landscape, and do not allow spray of this product to contact, drift or splash from soil onto the foliage, green stems, exposed roots or fruit of desirable plants. Avoid application of this product under conditions that favor drift of sprays onto desired ornamentals or turfgrass. The use of spray shields that limit the plant exposure to this product is directed when applying this product near desirable plants.

Do not apply this product around landscape ornamentals until plants have been actively growing for at least 30 days after transplanting, or for at least two months before ornamentals will be planted into treated areas.

PREEMERGENCE APPLICATION (NO WEEDS ARE PRESENT)
Mix 0.18 to 0.27 fl oz (5.3 to 8.1 mls) of this product per gallon of spray solution, and apply 1 gallon of spray solution to 1,000 square feet (8 to 12 fl oz/A) prior to weed germination (see Backpack Application table for more options and details). Apply this product to weed free soil, mulch or gravel surfaces. Moisture is necessary to activate this product on soil for residual weed control. When applied before weed germination, this product will control the broadleaf weeds and grasses listed in Table 1.

Established landscape ornamentals have shown tolerance to this product **only** when applied to the soil at the base of the plant. For maximum plant safety when using around desirable ornamentals, direct applications of this product to the soil, and leave a sufficient untreated buffer to ensure spray solution does not contact desired plants. Do not harvest fruit or nuts from treated trees within one year of application.

POSTEMERGENCE APPLICATION (WEEDS ARE PRESENT)
Mix 0.18 to 0.27 fl oz (5.3 to 8.1 mls) of this product per gallon of spray solution (8 to 12 fl oz/A), and apply 1 gallon of spray solution to 1,000 square feet to actively growing weeds (see calibration chart for backpack sprayers). Tank mixing this product with glyphosate will increase the spectrum of postemergence weed control over this product alone, provide faster postemergence weed control than glyphosate alone, and provide preemergence and postemergence control of the broadleaf weeds and grasses listed in Table 1.

Established landscape ornamentals have shown tolerance to applications of this product plus glyphosate **only** when applied to the soil at the base of the plant, and sprays do not directly contact or drift onto desirable plants. For maximum plant safety when using

around desirable ornamentals, direct applications of this product plus glyphosate towards the soil, and leave a sufficient non-treated buffer to ensure spray solution does not contact desired plants.

Thorough spray coverage of weeds is necessary to maximize weed control. Spray coverage must be uniform, but do not spray to the point of runoff.

IMPORTANT: Completely read and follow the glyphosate label. When tank mixing this product with other products, always follow the most restrictive use conditions on either label.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.
- Do not harvest fruit or nuts from treated trees within one year of application.

ON DORMANT BERMUDAGRASS GROWN ON RESIDENTIAL SITES, GOLF COURSES, SOD PRODUCTION AND SIMILAR AREAS

DIRECTIONS FOR USE

This product may be applied as a single or split application to well established dormant Bermudagrass. This product will provide preemergence and early postemergence control of annual bluegrass, chickweed, henbit and other winter annual weeds. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. This product will also provide preemergence control of crabgrass, goosegrass and other summer annual weeds. This product may be applied to dormant turfgrass in such areas as apartment complexes, golf courses, sod farms, roadsides, sports fields, campgrounds, office complexes, parks, parking areas, recreational sites, schools, residential turf and other similar sites. Bermudagrass exhibits tolerance to this product only when applied to semi-dormant or completely dormant turf in the late fall and before active growth resumes in the late winter/early spring. Application of this product to actively growing turfgrass (warm season and cool season) or during green-up may cause unacceptable injury.

BROADCAST APPLICATIONS

Apply 8 to 12 fl oz of this product per broadcast acre as a preemergence (to weed emergence) application. If weeds are present at the time of application apply this product plus an adjuvant (0.25% v/v non-ionic surfactant). Make postemergence (to weed emergence) applications of this product when weeds are actively growing and no larger than 2 inches in height. Thorough spray coverage is necessary to maximize the postemergence activity of this product. When applied after weed germination, this product will provide preemergence and postemergence control of broadleaf weeds and grasses. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. Postemergence weed control with this product may be more effective on certain weed species, and may not control mature, stressed or hardened off weeds that are not actively growing at the time of application.

This product will provide best control of annual bluegrass when applied in the late fall while plants are small. Control may be less effective when applied in the winter during under cold conditions when weeds are not actively growing. A second application of this product may be required to provide adequate season-long annual bluegrass control. This product will provide best control of crabgrass, goosegrass and other summer annual weeds when applied in the late winter before turfgrass resumes active growth.

TANK MIXING WITH OTHER TURFGRASS HERBICIDES

This product may be tank mixed with Manor Herbicide (metsulfuron-methyl).

USE AROUND BENTGRASS AND POA GREENS

This product has limited potential for lateral movement on level terrain, but can potentially move down slope after excessive rainfall and affect sensitive turf species including bentgrass and *Poa trivialis*. When applied upslope from bentgrass greens or Bermudagrass greens overseeded with *Poa trivialis,* allow an adequate buffer zone between greens and the treated area. If uncertain about the size of the buffer, 15 feet is suggested.

Risk of movement is decreased when this product is applied to soil at less than field capacity. Avoid application when heavy rain is imminent or when the soil is saturated.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per year.
- Exercise good judgment and caution when applying to dormant turfgrass until familiarity is gained with this product.
- Do not apply to golf course putting greens.
- Do not apply to warm season turfgrass that has been overseeded with cool season turfgrass (ex. perennial rye, *Poa trivialis*).
- Do not irrigate within 1 hour before or after application.
- Do not apply if rain is expected within 1 hour after application.
- Do not mow turfgrass within 12 hours after application.
- Do not apply within 30 days prior to cutting or lifting sod.

- Do not re-apply this product within 30 days.
- Do not apply in fall before turfgrass has ceased active growth or in late winter/ early spring after turfgrass has resumed active growth.

USE PRECAUTIONS

- Allow 8 weeks between application and seeding or sodding of turfgrass.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE

Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not contaminate food or foodstuffs. Do not store or transport near feed or food. Not for use or storage in or around the home. For help with any spill, leak, fire or exposure involving this material, call day or night **CHEMTREC (800) 424-9300.**

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:

[**Note to Reviewer:** The following statement will be included on all Final Printed Labels bearing multiple Container Disposal (Container Handling) statements] "**NOTE:** This product is available in multiple containers. Refer to the Net Contents section of this products labeling for the applicable "No refillable" or "Refillable" designation. Follow the container disposal [handling] instructions below that apply to your container type / size."

[**Note to Reviewer:** The bracketed section headers will be included when multiple container types / sizes are listed on the label.]

[Nonrefillable Containers 5 gallons or less:] 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 or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

[Nonrefillable containers larger than 5 gallons:] Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure 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. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

[Refillable containers larger 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 refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

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[SUBPART3]

INDEMNIFICATION TO BUYER OR TO CUSTOMERS OF BUYER, IF ANY, OR FOR ANY DAMAGES OR SUMS OF MONEY, CLAIMS OR DEMANDS WHATSOEVER, RESULTING FROM OR BY REASON OF, OR RISING OUT OF THE MISUSE, OR FAILURE TO FOLLOW LABEL WARNINGS OR INSTRUCTIONS FOR USE, OF THE GOODS SOLD BY MANUFACTURER OR SELLER TO BUYER. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER, USER, OR ITS CUSTOMERS. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S OR USER'S EXCLUSIVE REMEDY, AND MANUFACTURER'S OR SELLER'S TOTAL LIABILITY SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.

If you do not agree with or do not accept any of the directions for use, the warranty disclaimers, or limitations on liability, do not use the product, and return it unopened to the Seller, and the purchase price will be refunded.

Panther is a registered trademark of Nufarm Americas Inc. RVmmddyy

[SUBPART3]

Optional Marketing Claims:

[Nufarm Grow a better tomorrow]
[Grow a better tomorrow]
[Patent Pending]
[For use in aquatics market segment]
[For use in non-crop and industrial vegetation management market segment]
[For use in turf and ornamental market segment]
[FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS]
[FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS, CONIFER AND POPLAR RE-FORESTATION SITES]
[FOR USE IN CONTAINER AND FIELD GROWN CONIFERS (INCLUDING CHRISTMAS TREES) AND DECIDUOUS TREES, AROUND ESTABLISHED WOODY ORNAMENTALS IN LANDSCAPES AND MAINTAIN NON-CROP AREAS AND DORMANT BERMUDAGRASS]

SUPPLEMENTAL LABELING

~~*This supplemental labeling expires on (10-31-18), and must not be distributed or used after that date*~~.

GROUP 14 HERBICIDE

PANTHER™ SC – NON CROP HERBICIDE

- **[Subpart 1 – Aquatics] -** [ABN: PANTHER SC HERBICIDE – AQUATIC] [ABN: CLIPPER SC AQUATIC HERBICIDE] FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS

ACTIVE INGREDIENT:	
Flumioxazin*……	41.4%
OTHER INGREDIENTS: ……	58.6%
TOTAL: ……..	100.0%

*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

Panther SC contains 4 pounds flumioxazin per gallon.

EPA Reg. No. 71368-114

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

The labeling must be in possession of the user at the time of application. Read the label affixed to the container for this product before applying. Use of this product according to its labeling is subject to the use precautions and limitations imposed by the label affixed to the container for this product.

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.

PRODUCT INFORMATION

This product is a fast acting contact herbicide that controls selected submersed, emergent, and floating aquatic weeds. It is most effective when applied to young, actively growing weeds in water with a pH of less than 8.5.

This product may be applied to the following quiescent or slow moving bodies of water:

- Bayous
- Canals
- Drainage ditches
- Lakes
- Marshes
- Ponds (including golf course ponds)
- Reservoirs

Application of this product to public aquatic areas may require special approval and/or permits. Consult with local state agencies, if required.

USE RESTRICTIONS

- Do not exceed 400 ppb of this product during any one application.
- Do not apply to intertidal or estuarine areas.
- Do not re-treat the same section of water with this product more than 6 times per year.
- Do not retreat the same section of water within 28 days of application, except in areas with dense weed vegetation. In these areas, treat the remaining weeds within 10 to 14 days.
- In high density weed populations only treat 1/2 the water body at one time.
- Treated water may not be used for irrigation purposes on food crops until at least five (5) days after application.
- Do not use in water utilized for crawfish farming.

USE PRECAUTIONS

- There is no post-application holding restriction against use of treated water for drinking or recreational purposes (e.g. swimming, fishing).
- Treated water may be used for irrigation purposes on turf and landscape ornamentals as outlined in the *Irrigation Restrictions Following Application* table.

IRRIGATION RESTRICTIONS FOLLOWING APPLICATION

Application Method	Application Rate	Average Water Depth	Turf and Landscape Ornamentals	Ornamentals grown for production in Greenhouse and Nursery
Surface Spray	6 to 12 oz per surface acre	Greater than 3 feet	None	5 days
		Less than 3 feet	12 hours	5 days
Subsurface	Less than 200 ppb	N/A	1 day	5 days
	200 to 300 ppb	N/A	2 days	5 days
	300 to 400 ppb	N/A	3 days	5 days

WEED RESISTANCE MANAGEMENT

This product is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 14 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 this product or other Group 14 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 seedling 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.
- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective and 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 by 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 herbicide with a different mode of action, if available.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action.
- Contact your local sales representative, agricultural dealer, consultant, local extension specialist, applicator, crop advisor, and/or appropriate state agricultural extension service representative for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- Report any incidence of non-performance of this product against a particular weed species to your local sales representative or agricultural dealer.

BEST MANAGEMENT PRACTICES

- Plant into weed-free fields and keep fields as weed-free as possible.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
- Do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Prevent an influx of weeds into the field by managing field borders.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.
- Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of

action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.

- If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.

SPRAY 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 is responsible for considering all these factors when making decisions.

Do not spray this product under circumstances where spray droplets may drift on to unprotected persons, or plantings of food, forage or crops that might be damaged, or rendered unfit for sale, use or consumption. These precautions are not applicable for subsurface injection by closed systems.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial, ground or watercraft-based surface applications when wind velocity favors on-target product deposition. Apply only when the wind speed is less than or equal to 10 mph.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Low humidity and high temperatures increase the evaporation rate of spray droplets, and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.

Properly maintain and calibrate all aerial, ground and water based application equipment.

Where states have more stringent regulations, observe them.

APPLICATION AND SPRAYER INFORMATION

Mixing Instructions

- Mix with water having pH of 5 to 7. If pH is higher than 7, use an appropriate buffer to reduce pH to desirable range.
- Fill clean spray tank 1/2 full of desired level with water and add buffering agent if necessary.
- Add the required amount of this product to the spray tank while agitating.
- Fill spray tank to desired level with water. Ensure that this product is thoroughly mixed before making applications. Continue agitation until spray solution has been applied.
- Mix only the amount of spray solution that can be applied the day of mixing. Apply this product within 48 hours of mixing.

ADDITIVES

When applying this product to the foliage of floating or emerged aquatic weeds, mix with an adjuvant approved for use in aquatic sites. Mix this product with a non-ionic surfactant containing at least 80% active ingredient. Follow adjuvant manufacturer's label rates. Verify mixing compatibility by a jar test before using.

JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND THIS PRODUCT

Perform a jar test before mixing commercial quantities of this product, when using this product for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pint of the water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 milliliter of this product to the quart jar for every 3 fl oz of this product per acre being applied (4 ml if 12 fl oz per acre is the desired rate of this product), gently mix until product goes into suspension.
3. Add 1 milliliter of non-ionic surfactant, gently mix.
4. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.

5. An ideal tank mix combination will be uniform. If any of the following conditions are observed question the choice of adjuvant:
    a) Layer of oil or globules on the mixture's surface.
    b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
    c) Clabbering: Thickening texture (coagulated) like gelatin.

Sprayer Cleanup
If spray equipment is dedicated to application of aquatic herbicides, the following steps are to clean the spray equipment:

- Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.

If spray equipment will be used for purposes other than applying aquatic herbicides, it must be thoroughly cleaned following application of this product. The following steps must be used to clean the spray equipment:

1. Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank with clean water.
4. Circulate through sprayer for 5 minutes.
5. Then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
6. Drain tank completely.
7. Remove all nozzles and screens and rinse them with clean water.

AERIAL APPLICATION

To obtain satisfactory weed control, aerial application of this product, must provide uniform coverage of surface weeds and sufficient contact time. When applied by air, this product may not provide adequate control of some submersed weeds. Do not apply by air when significant drift on to non-target plants may occur or when wind velocity is more than 10 mph. Avoid spraying this product within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and avoid drift, the following directions must be observed:

Volume and Pressure
Apply this product in a minimum of 5 gallons of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gallons per acre may not provide adequate weed control. Higher gallonage applications generally provide more consistent weed control.

Nozzles and Nozzle Operation
Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles including diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0° and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

Adjuvants
Refer to the additive section or the tank mix partners label for adjuvant specifications.

DIRECTIONS FOR USE
TO CONTROL FLOATING AND EMERGED WEEDS USING SURFACE APPLICATION

This product will control weeds and algae listed in Table 1 when applied as a broadcast spray with appropriate equipment. For best results, apply this product to the foliage of actively growing weeds.

Table 1. Floating and Emerged Weeds

Common Name	Scientific Name
Alligator Weed	*Alternanthera philoxeroides*
Duckweed*	*Lemna* spp.
Frog's-bit	*Limnobium spongia*
Mosquito Fern	*Azolla* spp.
Water Fern	*Salvinia* spp.
Water Lettuce	*Pistia stratiotes*
Watermeal*	*Wolffia* spp.
Water Pennywort	*Hydrocotyle* spp.
Filamentous algae	*Pithophara*
Filamentous algae	*Cladophora*

* Coverage is essential for effective duckweed and watermeal control. Any duckweed and/or watermeal escapes left in the water column will quickly re-infest the water body. Apply 200 ppb concentration throughout the water body to control duckweed and watermeal – see **DIRECTIONS FOR USE TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS** section for additional application information.

Surface Application
Apply this product as a broadcast spray at 6 to 12 fl oz of formulated product per acre plus an adjuvant approved for use in aquatics.

This product is a contact herbicide that quickly degrades in the water column so plants that do not initially come in contact with the herbicide will not be controlled. Apply this product in a minimum of 30 gallons of water per acre to all areas of the water body where weeds exist. Coverage is essential for effective control as all floating weeds need to be exposed to lethal concentrations in all parts of the water body. Any untreated escapes or re-introductions of plants that were not treated will reestablish in areas where surface weeds had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

Application of this product during early morning hours may enhance weed control. When applying to densely packed actively growing surface weeds, ensure adequate coverage. Rapid decomposition of vegetation resulting from herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat floating surface weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with 2,4-D, diquat, glyphosate or other registered foliar applied herbicides for enhanced control of floating and emergent weeds.

Consult a manufacturer's label for specific rate restrictions and weeds controlled. Always follow the most restrictive label restrictions and precautions for all products used when making an applications involving tank mixes.

Application Equipment
Apply this product with sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume. Apply by backpack or handgun sprayer, airboat, helicopter, airplane or other application equipment that will ensure thorough coverage of target plant foliage.

DIRECTIONS FOR USE
TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS

This product will control submersed and floating weeds listed in Table 2, *Submersed and Floating Weeds Controlled by Subsurface Application*, when applied subsurface with appropriate equipment.

Table 2. Submersed and Floating Weeds Controlled by Subsurface Application

Common Name	Scientific Name
Coontail	*Ceratophyllum demersum*
Duckweed	*Lemna* spp.
Fanwort	*Cabomba caroliniana*
Hydrilla	*Hydrilla verticillata*
Hygrophila	*Hygrophila polysperma*
Naiad, Southern	*Najas guadalupensis*
Pondweed, Curlyleaf	*Potamogeton crispus*
Pondweed, Sago	*Potamogeton pectinatus*
Pondweed, Variable-Leaf	*Potamogeton diversifolius*
Water Fern	*Salvinia* spp.
Water Lettuce	*Pistia stratiotes*
Watermeal	*Wolffia* spp.
Watermilfoil, Eurasian	*Myriophyllum spicatum*
Watermilfoil, Variable-Leaf	*Myriophyllum heterophyllum*

Subsurface Treatment
Apply this product at a rate that will produce an initial concentration of 200 to 400 ppb (of active ingredient flumioxazin) in the water column.

This product is rapidly absorbed by target plants, but also breaks down quickly in water with a pH greater than 8.5. The pH of water surrounding mats of submersed vegetation can exceed 8.5 by early to mid-day, due to photosynthetic processes. Application of this product under these conditions may provide only partial weed control, and regrowth is likely. For best control, apply this product in a minimum of 30 gallons of water per acre in the early morning to actively growing weeds and early in the season before surface matting occurs. Complete coverage and sufficient contact time of submersed weeds with this product is required for optimal performance. Application of this product with subsurface trailing hoses designed to distribute the herbicide within the plant stand will provide more effective and longer term control of submersed weeds. Use Table 3, *Subsurface Application Rates* to determine the amount of this product needed to achieve desired concentration at different water depths. Use higher concentrations when weed biomass is heavy and/or weeds are more mature and topped out. Any untreated plants that are left in the water column can re-infest treated areas that had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

When applying this product to densely packed actively growing submersed weeds, a rapid decomposition of vegetation resulting from

herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat submersed weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with other registered submersed applied herbicides for enhanced control of submersed and floating weeds.

Application Equipment for Water Column Treatment
To improve distribution in the water column and ensure adequate coverage, when possible apply this product with subsurface trailing hoses in order to place the herbicide under the surface and throughout the biomass of aquatic vegetation. Keep swath width to a minimum in order to maximize contact with submersed aquatic vegetation. In small shallow water bodies, surface sprays may be required to apply this product. Apply by backpack or handgun sprayer or other application equipment that will ensure adequate coverage of target plant.

Information on Hydrilla Control in Florida
Apply this product as a subsurface treatment for hydrilla control. For best control of hydrilla apply during the late Winter/early Spring and/or early to late Fall. Efficacy of this product will be enhanced at these timings due to lower potential biomass present and lower pH of the water. If applied to mature topped out hydrilla, this product will cause some discoloration and loss of growing tips, but regrowth will be rapid.

Tank mixing this product with other registered herbicides is recommended, especially if hydrilla is approaching maturity or biomass is heavy.

Table 3. Subsurface Application Rates

Water Depth (feet)	Pints of This Product Required Per Surface Acre to Achieve Desired Water Concentration		
	200 ppb	300 ppb	400 ppb
1	1.1	1.6	2.1
2	2.1	3.2	4.2
3	3.2	4.8	6.4
4	4.2	6.4	8.5
5	5.3	8.0	10.6

Example: to achieve an initial concentration of 200 ppb of flumioxazin in a 4 foot deep water column, apply 4.2 pints of this product per surface acre.

RVmmddyy

SUPPLEMENTAL LABELING

~~*This supplemental labeling expires on (10-31-18), and must not be distributed or used after that date.*~~

GROUP 14 HERBICIDE

PANTHER™ SC – IVM

HERBICIDE

- **[Subpart 2 – Non-Crop / IVM]** - [ABN: PANTHER SC HERBICIDE – IVM]~~[ABN: LOCK DOWN SC HERBICIDE – IVM]~~ FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS, †CONIFER AND POPLAR RE-FORESTATION SITES

ACTIVE INGREDIENT:	
Flumioxazin*……	41.4%
OTHER INGREDIENTS: ……..	58.6%
TOTAL: ……..	100.0%

*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

Panther SC contains 4 pounds flumioxazin per gallon.

†*Not for use* in CA

EPA Reg. No. 71368-114

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

The labeling must be in possession of the user at the time of application. Read the label affixed to the container for this product before applying. Use of this product according to its labeling is subject to the use precautions and limitations imposed by the label affixed to the container for this product.

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.

PRODUCT INFORMATION

This product is a selective herbicide to maintain bare ground non-crop areas when used in accordance with this label. This product is effective as a preemergence and/or postemergence herbicide for control of selected grass and broadleaf weeds.

This product controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per year.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply to moist or wet desirable plant foliage.
- Do not apply within 300 feet of non-dormant pome or stone fruit crops.

USE PRECAUTIONS

- Treatment of powdery, dry soil or light sandy soil, or light sandy soil when there is little to no likelihood of rainfall soon after may result in off target movement and possible damage to actively growing susceptible crops when soil particles are moved by wind or water. Do not apply when these soil and environmental conditions are present.

WEED RESISTANCE MANAGEMENT

This product is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 14 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 this product or other Group 14 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 seedling 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.
- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective and 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 by 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 herbicide with a different mode of action, if available.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action.
- Contact your local sales representative, agricultural dealer, consultant, local extension specialist, applicator, crop advisor, and/or appropriate state agricultural extension service representative for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- Report any incidence of non-performance of this product against a particular weed species to your local sales representative or agricultural dealer.

BEST MANAGEMENT PRACTICES

- Plant into weed-free fields and keep fields as weed-free as possible.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
- Do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Prevent an influx of weeds into the field by managing field borders.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.
- Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.

PREEMERGENCE APPLICATION
Make a preemergence application of this product prior to weed emergence. Moisture is necessary to activate this product for residual weed control. Moisture is needed to move this product into the soil for preemergence weed control. Dry weather following application of this product may reduce effectiveness.

POSTEMERGENCE APPLICATION
For best results, apply this product to actively growing weeds. Applying this product under conditions that do not promote active weed growth will reduce herbicide effectiveness.

Do not apply this product when the weeds are under stress due to drought, excessive water and extremes in temperatures or disease. This product is most effective when applied under sunny conditions at temperatures above 65° F.

This product is rainfast one hour after application. Do not make applications if rain is expected within one hour of application or efficacy may be reduced.

APPLICATION EQUIPMENT

Important: Thoroughly clean the spray equipment, including all tanks, hoses, booms, screens and nozzles. **Do not use spray equipment used to apply this product to apply other materials to any desirable plant foliage.** Equipment with this product's residue remaining in the system may result in crop injury to subsequently treated crops.

SPRAYER PREPARATION

Before applying this product, start with clean, well maintained application equipment. Clean the spray tank, as well as all hoses and booms to ensure no residue from the previous spraying operation remains in the sprayer. Some pesticides, including but not limited to the sulfonylurea and phenoxy herbicides, are active at very small amounts and can cause crop injury when applied to susceptible crops. Clean the spray equipment according to the manufacturer's directions for the last product used before the equipment is used to apply this product. If two or more products were tank mixed prior to this product's application, follow the most restrictive cleanup procedure.

MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. Agitate solution. Agitation creates a rippling or rolling action on the water surface.
3. If tank mixing this product with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
4. Add any required adjuvants.
5. Fill spray tank to desired level with water. **Continue agitation until all spray solution has been applied.**
6. Mix only the amount of spray solution that can be applied the day of mixing. Apply this product within 48 hours of mixing.

SPRAYER CLEANUP

If spray equipment is dedicated to herbicide applications, the following steps are to clean the spray equipment:

- Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.

If spray equipment will be used for purposes other than applying herbicides, it must be thoroughly cleaned following application of this product. Use the following steps to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank, add suitable commercial spray tank cleaning material, following label directions, or add 1 gallon of 3% household ammonia for every 100 gallons of water, circulate through sprayer for 5 minutes, and then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
4. Drain tank completely.
5. Add enough clean water to the spray tank to allow all hoses, booms, screens and nozzles to be flushed for 2 minutes.
6. Remove all nozzles and screens and rinse them with clean water.

SPRAY DRIFT MANAGEMENT

Do not apply under circumstances where possible drift to unprotected persons or to food, forage or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption can occur.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial or ground applications when the wind velocity favors on-target product deposition. Drift potential is lowest between wind speeds of 2-10 mph. For all non-aerial applications, wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.
- All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.
- For ground boom applications, apply with nozzle height at the lowest boom height which provides uniform coverage and reduces exposure to evaporation and wind.

WEEDS CONTROLLED

When this product is applied preemergence or postemergence at directed rates and weed stages, the following grasses and broadleaf weeds are controlled:

TABLE 1. WEEDS CONTROLLED BY THIS PRODUCT

COMMON NAME	SCIENTIFIC NAME
Alyssum, Hoary	*Berteroa incana*
Amaranth	
Palmer	*Amaranthus palmeri*
Spiny	*Amaranthus spinosus*
American Burnweed	*Erechetities hieracifolia*
Barnyardgrass*	*Echinochloa crus-galli*
Beggarweed, Florida	*Desmodium Tortuosum*
Bittercress, Hairy	*Cardamine hirsute*
Bluegrass, Annual	*Poa annua*
Burclover, California	*Medicago Polymorpha*
Carpetweed	*Mollugo verticillata*
Chamberbitter	*Phyllanthus urinaria*
Chickweed	
Common	*Stellaria media*
Mouseear	*Cerastium vulgatum*
Crabgrass	
Large*	*Digitaria sanguinalis*
Smooth*	*Digitaria ishaemum*
Southern*	*Digitaria ciliaris*
Croton, Tropic	*Ctroton glandulosus* var.*septentrionalis*
Dandelion*	*Taraxacum officinale*
Donfennel	*Eupatorium capillifolium*
Doveweed	*Murdannia nudiflora*
Eclipta	*Eclipta prostrate*
Filaree, Redstem*	*Erodium cicutarium*
Foxtail	
Bristly*	*Setaria verticillata*
Giant*	*Setaria faberi*
Green*	*Setaria viridis*
Yellow*	*Setaria glauca*
Galinsoga, Hairy	*Galinsoga ciliate*
Geranium, Carolina	*Geranium carolinianum*
Goosegrass*	*Eleusine indica*
Groundsel, Common	*Senecio vulgaris*
Groundsel, Tree	*Baccharis halimifolia*
Henbit	*Lamium amplexicaule*
Horseweed*	*Conyza Canadensis*
Indigo, Hairy	*Indigofera hirsute*
Ivy, Ground*	*Glechoma hederacea*
Jimsonweed	*Datura stramonium*
Kochia	*Kochia scoparia*
Kyllinga, Green*	*Kyllinga brevifolia*
Ladysthumb	*Polygonum persicaria*
Lambsquarters, Common	*Chenopodium album*
Lovegrass, California*	*Eragrostis diffusa*
Liverwort	*Marchantia polymorpha*
Mallow	
Common	*Malva neglecta*
Little	*Malva parviflora*
Venice	*Hibiscus trionum*
Marsh Parsley	*Apium leptophyllum*

Mayweed*	*Anthemis cotula*
Morningglory	
Entireleaf	*Ipomoea hederacea* var.*integriuscula*
Ivyleaf	*Ipomoea hederacea*
Red/Scarlet	*Ipomoea coccinea*
Smallflower	*Jacquemontia tamnifolia*
Tall	*Ipomoea purpurea*
Moss	*Bryum* spp.
Mulberry Weed	Fatuoa villosa
Mustard	
Tumble	*Sisymbrium altissimum*
Wild	*Brassica kaber*
Nightshade	
Black	*Solanum nigrum*
Eastern Black	*Solanum ptycanthum*
Hairy	*Solanum sarrachoides*
Northern Willowherb	*Epilobium cillatum*
Panicum	
Fall*	*Panicum dichotomiflorum*
Texas*	*Panicum texanum*
Parsley-Peirt	*Alchemilla arvensis*
Pearlwort, Birdseye*	*Sagina procumbens*
Pennycress, Field	*Thlaspi arvense*
Phyllanthus, Longstalked	*Phyllanthus tenellus*
Pigweed	
Prostrate	*Amaranthus blitoides*
Redroot	*Amaranthus retroflexus*
Smooth	*Amaranthus hybridus*
Tumble	*Amaranthus albus*
Pineapple-weed*	*Matricaria matricarioides*
Plantain	
Broadleaf*	*Plantago major*
Buckhorn*	*Plantago lanceolata*
Poinsettia, Wild	*Euphorbia heterophylla*
Pondweed, Sago	*Potamogeton pectinatus*
Puncturevine	*Tribulus terrestris*
Purslane, Common	*Portulaca oleracea*
Pusley, Florida	*Richardia scabra*
Ragweed	
Common	*Ambrosia artemisiifolia*
Giant	*Ambrosia trifida*
Redmaids	*Calandrinia ciliate*
Redweed	*Melochia corchorifolia*
Rocket, Yellow	*Barbarea vulgaris*
Senna, Coffee	*Cassia occidentalis*
Sesbania, Hemp	*Sesbania exaltata*
Shepherd's-Purse	*Capsella bursa-pastoris*
Sida, Prickly (Teaweed)	*Sida spinosa*
Signalgrass*	*Brachiaria platyphylla*
Smartweed, Pennsylvania	*Polygonum pensylvanicum*
Sowthistle, Annual	*Sonchus oleraceus*
Spiderwort, Tropical	*Commelina benghalensis*
Spurge	
Petty	*Euphorbia peplus*
Prostrate	*Euphorbia humistrata Engelm*
Spotted	*Euphorbia maculate*

Starbur, Bristly*	*Acanthospermum hispidum*
Tassle-flower	*Emilia spp.*
Thistle	
Canada*	*Cirsium arvense*
Russian	*Salsola iberica*
Velvetleaf	*Abutilon theophrasti*
Waterhemp	
Common	*Amaranthus rudis*
Tall	*Amaranthus tuberculatus*
Woodsorrel, Yellow*	*Oxalis stricta*

*Preemergence control only

DIRECTIONS FOR USE

TO MAINTAIN BARE GROUND NON-CROP AREAS

This product, when used as directed, can be used for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed-free. Apply this product only to:

- Bare ground under guard rails, above-ground pipelines, and railroad beds, railroad yards and surrounding areas
- Bare ground in parking and storage areas, plant sites, substations, pumping stations, and tank farms
- Bare ground areas of airports, brick yards, industrial plant sites, lumber yards, military installations, and storage areas
- Bare ground around farm buildings, and along ungrazed fence rows, wind breaks and shelter belts
- Road surfaces, improved roadside areas and gravel shoulders.

Follow all applicable directions as outlined above under Product Information. See Table 1 for a list of broadleaf weeds and grasses controlled by this product.

This product offers residual and postemergence control of susceptible broadleaf and grass weeds as well as additional mode of action to assist in the control of ALS (acetolactate synthase) resistant weeds. The length of residual control is dependent on the rate applied as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase.

PREEMERGENCE APPLICATION
Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre as a preemergence application. Make preemergence (to weed emergence) applications of this product to a weed free soil surface. Preemergence applications of this product must be completed prior to weed emergence. Moisture is necessary to activate this product on soil for residual weed control. Dry weather following application of this product may reduce effectiveness. However, when adequate moisture is received after dry conditions, this product will control susceptible germinating weeds.

POSTEMERGENCE APPLICATION
Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 quart per acre crop oil concentrate). The addition of an adjuvant enhances this product activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product. Emerged weeds are controlled postemergence with this product, however, translocation of this product within a weed is limited, and control is affected by spray coverage and by the addition of an adjuvant. The most effective postemergence weed control with this product occurs when applied in combination with a surfactant to weeds less than 2 inches in height.

SOIL CHARACTERISTICS
Application of this product to soils with high organic matter and/or high clay content may require higher dosages than with soils with low organic matter and/or low clay content. Application to cloddy seedbeds can result in reduced weed control.

CARRIER VOLUME AND SPRAY PRESSURE

PREEMERGENCE APPLICATION
To ensure uniform coverage, use 10 to 30 gallons of spray solution per acre. Nozzle selection must meet manufacturer's gallonage and pressure directions for preemergence herbicide application.

POSTEMERGENCE APPLICATION
To ensure thorough coverage, use 15 to 30 gallons of spray solution per acre. Use 20 to 30 gallons per acre if dense vegetation or heavy residue is present on the soil surface. Nozzle selection must meet manufacturer's gallonage and pressure recommendations for postemergence herbicide application.

ADDITIVES

POSTEMERGENCE APPLICATION
When applying this product after weed emergence, mix with an agronomically approved adjuvant. Use a crop oil concentrate which contains at least 15% emulsifiers and 80% oil or a non-ionic surfactant containing at least 80% active ingredient when applying this product as part of a postemergence weed control program. Verify mixing compatibility by a jar test before using.

A spray grade nitrogen source (either ammonium sulfate at 2.0 to 2.5 pounds per acre or a 28 to 32% nitrogen solution at 1 to 2 quarts per acre) may be added to the spray mixture along with a crop oil concentrate or non-ionic surfactant to enhance weed control. The

addition of a nitrogen source does not replace the need for crop oil concentrate or non-ionic surfactant.

JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND THIS PRODUCT

When using this product and an adjuvant, including in stale seed bed, layby, hooded/shielded or reduced tillage situations, perform a jar test before mixing commercial quantities of this product, when using this product for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pint of the water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 ml of this product to the quart jar for every 3 fl oz of this product per acre being applied (4 mls if 12 fl oz per acre is the desired rate of this product), gently mix until product goes into suspension.
3. Add 60 mls of crop oil to the quart jar or 1 ml of non-ionic surfactant if it is being used in place of oil, gently mix.
4. If nitrogen is being used, add 16 mls of the 28 to 32% nitrogen source to the quart jar. If ammonium sulfate is being used, add 19 g AMS to the quart jar in place of the 28 to 32% nitrogen.
5. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
6. An ideal tank mix combination will be uniform. If any of the following conditions are observed question the choice of adjuvant:
    a) Layer of oil or globules on the mixture's surface.
    b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
    c) Clabbering: Thickening texture (coagulated) like gelatin.

APPLICATION EQUIPMENT

Application equipment must be clean and in good repair. Nozzles must be uniformly spaced on boom and frequently checked for accuracy.

BROADCAST APPLICATION

Apply this product, and this product's tank mixes, with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume.

BAND APPLICATION

When banding, use proportionately less water and this product per acre.

HANDGUN APPLICATION

Applications may also be made using a handgun sprayer. Use a spray volume of at least 40 gallons per acre to insure uniform coverage.

AERIAL APPLICATION

To obtain satisfactory weed control with aerial applications of this product, uniform coverage must be obtained. Do not spray when drift is possible or when wind velocity is more than 10 mph. Avoid spraying this product within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and drift, the following directions must be observed:

Volume Pressure

Use this product in 5 to 10 gallons of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gallons per acre will provide inadequate weed control. Higher gallonage applications provide more consistent weed control.

Nozzle and Nozzle Operation

Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles, including diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0º and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

Adjuvants

Refer to the additive section or the tank mix partner's label for adjuvant specifications.

TANK MIX APPLICATION

In addition to weeds controlled by this product used alone, tank mixtures with other preemergence and postemergence herbicides registered for use in non-crop areas provide a broader spectrum of weed control. This product must be tank mixed with other non-crop herbicides including, but not limited to those products listed below.

TANK MIX COMBINATIONS FOR NON-SELECTIVE VEGETATION CONTROL

2,4-D	hexazinone	Picloram
bromacil	imazapic	Pramitol
chlorsulfuron	imazapyr	Prodiamine
dicamba	metsulfuron-methyl	Simazine
diuron	norflurazon	sulfometuron-methyl
clopyralid	oryzalin	Tebuthiuron
glyphosate	pendimethalin	Triclopyr

IMPORTANT: Completely read and follow the label of any potential tank mix partner. When using tank mixtures, use conditions must be in accordance with the most restrictive of the label limitations and precautions on either herbicide label.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.

DIRECTIONS FOR USE

†IN CONIFER RE-FORESTATION SITES FOLLOWING TIMBER HARVEST

This product is a preemergence and postemergence herbicide for control of selected grass and broadleaf weeds in conifer re-forestation sites following timber harvest operations. This product may be used as a site preparation treatment prior to transplanting of conifers or as a conifer release treatment after stand establishment.
†*Not for use in CA*

Site Preparation - Application Before Transplanting
Apply 8 to 12 fl oz of this product per acre. Transplant operations must take place at least 3 months after application. To obtain optimal weed control, apply this product before weed emergence or after a burndown herbicide has controlled existing vegetation. If existing weed canopy is less than 40%, this product may be tank mixed with a burndown herbicide to provide preemergence weed control.

Apply this product in at least 10 gallons of water per acre to achieve uniform spray coverage using ground or aerial spray equipment.

Conifer Release Treatments — Applications only within 3 years after transplanting.
Apply 8 to 12 fl oz of this product per acre over the top of trees prior to budbreak in the spring or after dormancy in fall. Do not apply this product over the top of trees after budbreak or needle spotting and defoliation may occur. This product should not affect new growth of trees. See Table 2 for a list of tolerant conifers for over the top treatments.

TANK MIXING — Conifer Release Treatments
Certain liquid formulations of other pesticides may increase the postemergence activity of this product, but may also increase the potential for injury when applied over the top of various plants. Therefore, tank mixtures of these materials with this product may be more injurious than this product applied alone and need to be tested to determine if they can be used safely on a widespread basis.

ADJUVANTS — Conifer Release Treatments
When using as a Conifer Release Treatment, do not mix this product with any adjuvant or fertilizer.

IMPORTANT: When applied as directed, the conifers listed in Table 2 have shown tolerance to this product. However, this product is a very active herbicide. Exercise responsible judgment and caution until familiarity is gained with this product. If a desired conifer species is not listed in Table 2, evaluate the safety of this product on a small number of plants under commercial growing conditions, and monitor plant response for four to six weeks for phytotoxicity. Test this product on a small number of plants to determine if this product can be used safely on a widespread basis. Do not apply this product over the top of conifers until trees have been growing in the treated area for at least one year. The use of nylon mesh wraps, commonly used to deter animal browsing, may increase plant injury if placed on plants after over the top application of this product.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.

TABLE 2. TOLERANT CONIFER TREE SPECIES

COMMON NAME	SCIENTIFIC NAME
Arborvitae	
American	*Thuja occidentalis*
Oriental	*Thuja orientalis*
Fir	
Concolor	*Abies concolor*
Cork Bark	*Abies lasiocarpa*
Douglas	*Pseudotsuga menzesii*
Fraser	*Abies fraseri*
Grand	*Abies grandis*
Noble	*Abies procera*
Turkish	*Abies bommuelleriana*
Hemlock	
Eastern	*Tsuga Canadensis*

Western	*Tusga heterophylla*
Juniper	
Blue Star	*Juniperus scopularum*
Creeping	*Juniperus horizontalis*
Japanese Garden	*Juniperus chinensis*
Tamarix	*Juniperus Sabina*
Pine	
Austrian	*Pinus nigra*
Eastern White	*Pinus strobes*
Jack	*Pinus banksiana*
Japanese Black	*Pinus thunbergiana*
Loblolly	*Pinus taeda*
Lodgepole	*Pinus contorta*
Longleaf	*Pinus palustris*
Mugo	*Pinus mugo*
Ponderosa	*Pinus ponderosa*
Sand	*Pinus clausa*
Scotch	*Pinus sylvestris*
Shortleaf	*Pinus echinata*
Slash	*Pinus elliottii*
Virginia	*Pinus virginiana*
Spruce	
Blue	*Picea pungens*
Dwarf Alberta	*Picea glauca conica*
Norway	*Picea abies*
Sitka	*Picea sitchensis*
Yew	
English	*Taxus baccata*
Japanese	*Taxus cuspidate*

DIRECTIONS FOR USE

†IN POPLAR PLANTATIONS AND TIMBER RE-FORESTATION SITES

This product is a preemergence and postemergence herbicide for control of selected grass and broadleaf weeds in poplar plantations and timber re-forestation sites following timber harvest operations. This product may be used as a site preparation treatment prior to transplanting of trees or as a release treatment after stand establishment.
†*Not for use in CA*

Site Preparation - Application Before Transplanting
Apply 8 to 12 fl oz of this product per acre. Transplant operations must take place at least 3 months after application. To obtain optimal weed control, apply this product before weed emergence or after a burndown herbicide has controlled existing vegetation. If existing weed canopy is less than 40%, this product may be tank mixed with a burndown herbicide to provide preemergence weed control.

Apply this product in at least 10 gallons of water per acre to achieve uniform spray coverage using ground or aerial spray equipment.

Release Treatments — Applications Within 3 Years After Transplanting
Apply 8 to 12 fl oz of this product per acre over the top of trees prior to budbreak in the spring or after dormancy in fall. Do not apply this product over the top of trees after budbreak or leaf spotting and defoliation may occur. This product should not affect new growth of trees of tolerant poplars for over the top treatments.

TANK MIXING — Poplar Release Treatments
Certain liquid formulations of other pesticides may increase the postemergence activity of this product, but may also increase the potential for injury when applied over the top of various plants. Therefore, tank mixtures of these materials with this product may be more injurious than this product applied alone and need to be tested to determine if they can be used safely on a widespread basis.

ADJUVANTS — Poplar Release Treatments
When applying Release Treatments, do not mix this product with any adjuvant or fertilizer.

IMPORTANT: When applied as directed, poplars *(Populus balsamifera, P. niger and P. tremuloides),* hybrid poplars *(P.* sp. x sp.), and cottonwoods *(P. deltoids and P. trichocarpa)* have shown tolerance to this product. However, this product is a very active herbicide. Exercise responsible judgment and caution until familiarity is gained with this product. Test this product on a small number of plants to determine if this product can be used safely on a widespread basis. Do not apply this product over the top unless trees are more than one year old.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.

RVmmddyy

SUPPLEMENTAL LABELING

~~*This supplemental labeling expires on (10-31-18), and must not be distributed or used after that date.*~~

GROUP 14 HERBICIDE

SureGuard® SC Herbicide

[ABN: LOCK DOWN SC HERBICIDE]

[FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS]
[FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS]
[FOR USE IN CONTAINER AND FIELD GROWN CONIFERS (INCLUDING CHRISTMAS TREES) AND DECIDUOUS TREES, AROUND ESTABLISHED WOODY ORNAMENTALS IN LANDSCAPES AND MAINTAIN NON-CROP AREAS AND DORMANT BERMUDAGRASS]

ACTIVE INGREDIENT:	
Flumioxazin*.....	41.4%
OTHER INGREDIENTS:	58.6%
TOTAL:	100.0%

*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

SureGuard SC contains 4 pounds flumioxazin per gallon.

EPA Reg. No. 71368-114

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

The labeling must be in possession of the user at the time of application. Read the label affixed to the container for this product before applying. Use of this product according to its labeling is subject to the use precautions and limitations imposed by the label affixed to the container for this product.

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.

PRODUCT INFORMATION

This product is a fast acting contact herbicide for use in the management of undesirable aquatic vegetation in slow moving or quiescent waters, to maintain bare ground non-crop areas, container and field grown conifers (including Christmas trees) and deciduous trees, around established woody ornamentals in landscapes and dormant Bermudagrass.

This product is also effective as a preemergence and/or postemergence herbicide for control of selected grass and broadleaf weeds.

This product controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide.

This product may cause spotting or speckling on foliage if the spray solution directly contacts actively growing plant foliage or green bark. Leaves that receive indirect (drift) spray contact may be affected in a similar manner. Translocation of this product is limited, and under most conditions established and vigorously growing woody ornamentals will rapidly outgrow any injury symptoms. **However, direct application to actively growing foliage can cause severe injury or death with sensitive ornamental plant species, especially in herbaceous bedding plants and flowers.**

IMPORTANT: When applied as directed, plants listed on this label have shown tolerance to this product. However, this product is a very active herbicide. Exercise responsible judgment and caution until familiarity is gained with this product. Due to variability within species, crop growth stage, environmental conditions and application techniques, it is directed that users test this product under local growing conditions on a small number of plants and evaluate for 4 to 6 weeks for phytotoxicity. Testing this product on a small number of plants will determine if the herbicide can be used safely on a widespread application. Neither the seller nor the manufacturer of this product has investigated the safety to plants not listed on the label.

WEED RESISTANCE MANAGEMENT

This product is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 14 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 this product or other Group 14 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 seedling 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.

- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective and 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 by 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 herbicide with a different mode of action, if available.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action.
- Contact your local sales representative, agricultural dealer, consultant, local extension specialist, applicator, crop advisor, and/or appropriate state agricultural extension service representative for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- Report any incidence of non-performance of this product against a particular weed species to your local sales representative or agricultural dealer.

BEST MANAGEMENT PRACTICES

- Plant into weed-free fields and keep fields as weed-free as possible.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
- Do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Prevent an influx of weeds into the field by managing field borders.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.
- Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.

PREEMERGENCE APPLICATION

Make the preemergence application of this product prior to weed emergence. Moisture is necessary to activate this product for residual weed control. Moisture is needed to move this product into the soil for preemergence weed control. Dry weather following application of this product may reduce effectiveness. However, when adequate moisture is received after dry conditions, this product will control susceptible germinating weeds.

When adequate moisture is not received soon after this product is applied to soil, weed control may be improved by using shallow cultivation. If weeds begin to emerge, irrigate (1/2" of water) or cultivate uniformly with shallow tillage equipment that will not damage the crop. Deep cultivation reduces the effectiveness of this product.

POSTEMERGENCE APPLICATION

For best results, apply this product to actively growing weeds. The most effective postemergence weed control with this product occurs when applied in combination with a surfactant to weeds less than 2 inches in height. Applying this product under conditions that do not promote active weed growth will reduce herbicide effectiveness. Do not apply this product when the weeds are under stress due to drought, excessive water and extremes in temperatures or disease. This product is most effective when applied under sunny conditions at temperatures above 65° F. This product is rainfast one hour after application. Do not make applications if rain is expected within one hour of application or efficacy may be reduced.

SOIL CHARACTERISTICS

Application of this product to soils with high organic matter and/or high clay content may require higher dosages than with soils with low organic matter and/or low clay content. Application to cloddy seedbeds can result in reduced weed control.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions 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.

TANK MIX APPLICATION

In addition to weeds controlled by this product used alone, tank mixtures with other herbicides provides a broader spectrum of weed control. This product can be tank mixed with other herbicides including, but not limited to those products listed below.

TANK MIX COMBINATIONS FOR NON-SELECTIVE VEGETATION CONTROL

2,4-D	hexazinone	picloram
bromacil	imazapic	pramitol
chlorsulfuron	imazapyr	prodiamine
dicamba	metsulfuron-methyl	simazine
diuron	norflurazon	sulfometuron-methyl
clopyralid	oryzalin	tebuthiuron
glyphosate	pendimethalin	Triclopyr

Tank Mixing - Container and Field Grown Conifers

This product may be tank mixed with products containing the following active ingredients labeled for use in conifers:

clethodim
glyphosate*
oryzalin
prodiamine
simazine*

*Do not apply glyphosate or simazine to containerized ornamentals.

Tank Mixing - Field and Container Grown Deciduous Trees

This product may be tank mixed with products containing the following active ingredient labeled for use in deciduous trees:

clethodim
glyphosate*
metolachlor
oryzalin
pendimethalin
prodiamine
simazine*

*Do not apply glyphosate or simazine to containerized plants.

Tank Mixing - With Other Turfgrass Herbicides

This product may be tank mixed with Manor Herbicide (metsulfuron-methyl).

SPRAY 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 is responsible for considering all these factors when making decisions.

Do not spray this product under circumstances where spray droplets may drift on to unprotected persons, or plantings of food, forage or crops that might be damaged, or rendered unfit for sale, use or consumption. These precautions are not applicable for subsurface injection by closed systems.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial, ground or watercraft-based surface applications when wind velocity favors on-target product deposition. Apply only when the wind speed is less than or equal to 10 mph. For all non-aerial applications, wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Low humidity and high temperatures increase the evaporation rate of spray droplets, and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.

Properly maintain and calibrate all aerial, ground and water based application equipment.

Where states have more stringent regulations, observe them.

APPLICATION AND SPRAYER INFORMATION

Apply this product with sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume. Apply by backpack or handgun sprayer, airboat, helicopter, airplane, or other application equipment that will ensure thorough coverage of plant foliage. **Important:** Thoroughly clean spray equipment, including all tanks, hoses, booms, screens and nozzles. **Do not use spray equipment used to apply this product to apply other materials or to any desirable plant foliage.** Equipment with this product's residue remaining in the system may result in crop injury to subsequently treated crops.

BROADCAST APPLICATION
Apply this product, and this product's tank mixes, with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume.

BAND APPLICATION
When banding, use proportionately less water and this product per acre.

HANDGUN APPLICATION

Applications may also be made using a handgun sprayer. Use a spray volume of at least 40 gallons per acre to insure uniform coverage.

BACKPACK APPLICATION
When applying this product with a backpack sprayer follow all above restrictions. Calibrate backpack sprayers to deliver 1 gallon of spray solution per 500 to 1,000 square feet.

Mixing Rate for This Product in 1 Gallon of Spray Solution for Backpack Applications

Application Volume	Rate (fl oz/A)	Fl oz to Mix in 1 gal Water	Teaspoons to Mix in 1 gal Water	Mls to Mix in 1 gal Water
1 gal per 500 sq ft (87 GPA)	8	0.09	0.6	2.7
	10	0.11	0.7	3.4
	12	0.14	0.8	4.1
1 gal per 750 sq ft (65 GPA)	8	0.14	0.8	4.1
	10	0.17	1	5.1
	12	0.21	1.2	6.1
1 gal per 1,000 sq ft (44 GPA)	8	0.18	1.1	5.3
	10	0.23	1.4	6.8
	12	0.27	1.6	8.1

Example: Applicator wants to spray 1 gallon of this product solution per 1,000 square feet of ground bed at a rate of 12 fl oz/A. Mix 0.27 fl oz (1.6 teaspoons or 8.1 mls) of this product in 1 gallon of water.

AERIAL APPLICATION
To obtain satisfactory weed control, aerial application of this product, must provide uniform coverage of surface weeds and sufficient contact time. When applied by air, this product may not provide adequate control of some submersed weeds. Do not apply by air when significant drift on to non-target plants may occur or when wind velocity is more than 10 mph. Avoid spraying this product within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and avoid drift, the following directions must be observed:

Volume and Pressure
Apply this product in a minimum of 5 gallons of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gallons per acre may not provide adequate weed control. Higher gallonage applications generally provide more consistent weed control.

Nozzles and Nozzle Operation
Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles like diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0° and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

SPRAYER PREPARATION
Before applying this product, start with clean, well maintained application equipment. Clean the spray tank, as well as all hoses and booms to ensure no residue from the previous spraying operation remains in the sprayer. Some pesticides, including but not limited to the sulfonylurea and phenoxy herbicides, are active at very small amounts and can cause crop injury when applied to susceptible crops. Clean the spray equipment according to the manufacturer's directions for the last product used before the equipment is used to apply this product. If two or more products were tank mixed prior to this product's application, follow the most restrictive cleanup procedure.

Mixing Instructions
- Mix with water having pH of 5 to 7. If pH is higher than 7, use an appropriate buffer to reduce pH to desirable range.
- Fill clean spray tank 1/2 full of desired level with water and add buffering agent if necessary.

- Add the required amount of this product to the spray tank while agitating.
- Fill spray tank to desired level with water. Ensure that this product is thoroughly mixed before making applications. Continue agitation until spray solution has been applied.
- If tank mixing this product with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions.
- Mix the amount of spray solution that can be applied the day of mixing. Apply this product within 48 hours of mixing.

CARRIER VOLUME AND SPRAY PRESSURE

PREEMERGENCE APPLICATION
To ensure uniform coverage, use 10 to 40 gallons of spray solution per acre. When making backpack applications, apply 50 to 100 gallons of spray solution per acre. Nozzle must meet manufacturer's gallonage and pressure directions for preemergence herbicide application.

POSTEMERGENCE APPLICATION
To ensure thorough coverage, use 15 to 30 gallons of spray solution per acre. Use 20 to 30 gallons per acre if dense vegetation or heavy residue is present on the soil surface. When applying with a backpack sprayer, apply 1 gallon of spray solution per 500 to 1,000 square feet. Nozzle selection must meet manufacturer's gallonage and pressure directions for postemergence herbicide application.

ADDITIVES
When applying this product to the foliage of floating or emerged aquatic weeds, mix with an adjuvant approved for use in aquatic sites. Follow adjuvant manufacturer's label rates. Verify mixing compatibility by a jar test before using.

When applying this product after weed emergence in terrestrial settings, mix with an agronomically approved adjuvant. Use a non-ionic surfactant containing at least 80% active ingredient when applying this product as part of a postemergence weed control program. Verify mixing compatibility by a jar test before using.

ADJUVANTS
Refer to the additive section or the tank mix partners label for adjuvant specifications.
When applying Release Treatments, do not mix this product with any adjuvant or fertilizer.

JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND THIS PRODUCT

Perform a jar test before mixing commercial quantities of this product, when using this product for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pint of the water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 milliliter of this product to the quart jar for every 3 fl oz of this product per acre being applied (4 ml if 12 fl oz per acre is the desired rate of this product), gently mix until product goes into suspension.
3. Add 1 milliliter of non-ionic surfactant or 60 millimeter of crop oil concentrate, gently mix.
4. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
5. An ideal tank mix combination will be uniform. If any of the following conditions are observed question the choice of adjuvant:

   a) Layer of oil or globules on the mixture's surface.

   b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.

   c) Clabbering: Thickening texture (coagulated) like gelatin.

SPRAYER CLEANUP
If spray equipment is dedicated to herbicide applications, the following steps are to clean the spray equipment:

- Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.

If spray equipment will be used for purposes other than applying herbicides, it must be thoroughly cleaned following application of this product. The following steps must be used to clean the spray equipment:

1. Completely drain the spray tank and rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank with clean water and household ammonia. Use 1 gallon of 3% household ammonia for every 100 gallons of water.
4. Circulate through sprayer for 5 minutes.
5. Then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
6. Loosen any diaphragms before flushing the spray system, allowing cleaning solution to spray through the open diaphragm.
7. Drain tank completely.
8. Add enough clean water to the spray tank to flush hoses, booms, screens and nozzles for 2 minutes.
9. Remove all nozzles and screens and rinse them with clean water.

WEEDS CONTROLLED

When this product is applied preemergence or postemergence at directed rates and weed stages, the following grasses and broadleaf weeds are controlled:

TABLE 1 – WEEDS CONTROLLED	
COMMON NAME	**SCIENTIFIC NAME**
Alyssum, Hoary	*Berteroa incana*
Amaranth	
Palmer	*Amaranthus palmeri*
Spiny	*Amaranthus spinosus*
American Burnweed	*Erechetities hieracifolia*
Barnyardgrass*	*Echinochloa crus-galli*
Beggarweed, Florida	*Desmodium Tortuosum*
Bittercress, Hairy	*Cardamine hirsute*
Bluegrass, Annual	*Poa annua*
Burclover, California	*Medicago Polymorpha*
Carpetweed	*Mollugo verticillata*
Chamberbitter	*Phyllanthus urinaria*
Chickweed	
Common	*Stellaria media*
Mouseear	*Cerastium vulgatum*
Crabgrass	
Large*	*Digitaria sanguinalis*
Smooth*	*Digitaria ishaemum*
Southern*	*Digitaria cilaris*
Croton, Tropic	*Croton glandulosus var. septentrionalis*
Dandelion*	*Taraxacum officinale*
Dogfennel	*Eupatorium capillifolium*
Doveweed	*Murdannia nudiflora*
Eclipta	*Eclipta prostrate*
Filaree, Redstem*	*Erodium cicutarium*
Foxtail	
Bristly*	*Setaria verticillata*
Giant*	*Setaria faberi*
Green*	*Setaria viridis*
Yellow*	*Setaria glauca*
Galinsoga, Hairy	*Galinsoga ciliate*
Geranium, Carolina	*Geranium carolinianum*
Goosegrass*	*Eleusine indica*
Groundsel, Common	*Senecio vulgaris*
Groundsel, Tree	*Bachharis halimifolia*
Henbit	*Lamium amplexicaule*
Horseweed*	*Conyza Canadensis*
Indigo, Hairy	*Indigofera hirsute*
Ivy, Ground*	*Glechoma hederacea*
Jimsonweed	*Datura stramonium*
Kochia	*Kochia scoparia*
Kyllinga, Green*	*Kyllinga brevifolia*
Ladysthumb	*Polygonum persicaria*
Lambsquarters, Common	*Chenopodium album*
Lovegrass, California*	*Eragrostis diffusa*
Liverwort	*Marchantia polymorpha*
Mallow	
Common	*Malva neglecta*
Little	*Malva parviflora*
Venice	*Hibiscus trionum*
Marsh Parsley	*Apium leptophyllum*
Mayweed*	*Anthemis cotula*
Morningglory	
Entireleaf	*Ipomoea hederacea var. integriuscula*
Ivyleaf	*Ipomoea hederacea*
Red/Scarlet	*Ipomoea coccinea*
Smallflower	*Jacquemontia tamnifolia*
Tall	*Ipomoea purpurea*
Moss	*Bryum* spp.
Mulberry Weed	*Fatuoa villosa*
Mustard	
Tumble	*Sisymbrium altissimum*
Wild	*Brassica kaber*
Nightshade	
Black	*Solanum nigrum*
Eastern Black	*Solanum ptycanthum*
Hairy	*Solanum sarrachoides*
Northern Willowherb	*Epilobium cillatum*
Panicum	
Fall*	*Panicum dichotomiflorum*
Texas*	*Panicum texanum*
Parsley-Peirt	*Alchemilla arvensis*
Pearlwort, Birdseye*	*Sagina procumbens*

Pennycress, Field	*Thlaspi arvense*
Phyllanthus, Longstalked	*Phyllanthus tenellus*
Pigweed	
Prostrate	*Amaranthus blitoides*
Redroot	*Amaranthus retroflexus*
Smooth	*Amaranthus hybridus*
Tumble	*Amaranthus albus*
Pineapple-weed*	*Matricaria matricarioides*
Plantain	
Broadleaf*	*Plantago major*
Buckhorn*	*Plantago lanceolata*
Pointsettia, Wild	*Euphorbia heterophylla*
Pondweed, Sago	*Potamogeton pectinatus*
Puncturevine	*Tribulus terrestris*
Purslane, Common	*Portulaca oleracea*
Pusley, Florida	*Richardia scabra*
Ragweed	
Common	*Ambrosia artemisiifolia*
Giant	*Ambrosia trifida*
Redmaids	*Calandrinia ciliate*
Redweed	*Melochia corchorifolia*
Rocket, Yellow	*Barbarea vulgaris*
Senna, Coffee	*Cassia occidentalis*
Sesbania, Hemp	*Sesbania exaltata*
Shepherd's-Purse	*Capsella burse-pastoris*
Sida, Prickly (Teaweed)	*Sida spinosa*
Signalgrass*	*Brachiaria platyphylla*
Smartweed, Pennsylvania	*Polygonum pensylvanicum*
Sowthistle, Annual	*Sonchus oleraceus*
Spiderwort, Tropical	*Commelina benghalensis*
Spurge	
Petty	*Euphorbia peplus*
Prostrate	*Euphorbia humistrata Engelm*
Spotted	*Euphorbia maculate*
Starbur, Bristly*	*Acanthospermum hispidum*
Tassle-flower	*Emilia* spp.
Thistle	
Canada*	*Cirsium arvense*
Russian	*Salsola iberica*
Velvetleaf	*Abutilon theophrasti*
Waterhemp	
Common	*Amaranthus rudis*
Tall	*Amaranthus tuberculatus*
Woodsorrel, Yellow*	*Oxalis stricta*

**Preemergence control only*

AQUATIC WEED CONTROL

This product may be applied to the following quiescent or slow moving bodies of water:

- Bayous
- Canals
- Drainage ditches
- Lakes
- Marshes
- Ponds (including golf course ponds)
- Reservoirs

This product is most effective when applied to young, actively growing weeds in water with a pH of less than 8.5. Application of this product to public aquatic areas may require special approval and/or permits. Consult with local state agencies, if required.

USE RESTRICTIONS

- Do not exceed 400 ppb of this product during any one application.
- Do not apply to intertidal or estuarine areas.
- Do not re-treat the same section of water with this product more than 6 times per year.
- Do not retreat the same section of water within 28 days of application, except in areas with dense weed vegetation. In these areas, treat the remaining weeds within 10 to 14 days.
- In high density weed populations only treat 1/2 the water body at one time.
- Treated water may not be used for irrigation purposes on food crops until at least five (5) days after application.
- Do not use in water utilized for crawfish farming.

USE PRECAUTIONS

- There is no post-application holding restriction against use of treated water for drinking or recreational purposes (e.g. swimming, fishing).
- Treated water may be used for irrigation purposes on turf and landscape ornamentals as outlined in the *Irrigation Restrictions Following Application* table.

IRRIGATION RESTRICTIONS FOLLOWING APPLICATION

Application Method	Application Rate	Average Water Depth	Turf and Landscape Ornamentals	Ornamentals grown for production in Greenhouse and Nursery
Surface Spray	6 to 12 oz per surface acre	Greater than 3 feet	None	5 days
		Less than 3 feet	12 hours	5 days
Subsurface	Less than 200 ppb	N/A	1 day	5 days
	200 to 300 ppb	N/A	2 days	5 days
	300 to 400 ppb	N/A	3 days	5 days

DIRECTIONS FOR USE
TO CONTROL FLOATING AND EMERGED WEEDS USING SURFACE APPLICATION

This product will control weeds and algae listed in Table 2 when applied as a broadcast spray with appropriate equipment. For best results, apply this product to the foliage of actively growing weeds.

Table 2. Floating and Emerged Weeds

Common Name	Scientific Name
Alligator Weed	*Alternanthera philoxeroides*
Duckweed*	*Lemna* spp.
Frog's-bit	*Limnobium spongia*
Mosquito Fern	*Azolla* spp.
Water Fern	*Salvinia* spp.
Water Lettuce	*Pistia stratiotes*
Watermeal*	*Wolffia* spp.
Water Pennywort	*Hydrocotyle* spp.
Filamentous algae	*Pithophara*
Filamentous algae	*Cladophora*

* Coverage is essential for effective duckweed and watermeal control. Any duckweed and/or watermeal escapes left in the water column will quickly re-infest the water body. Apply 200 ppb concentration throughout the water body to control duckweed and watermeal.– see **DIRECTIONS FOR USE TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS** section for additional application information.

Surface Application
Apply this product as a broadcast spray at 6 to 12 fl oz of formulated product per acre plus an adjuvant approved for use in aquatics.

This product is a contact herbicide that quickly degrades in the water column so plants that do not initially come in contact with the herbicide will not be controlled. Apply this product in a minimum of 30 gallons of water per acre to all areas of the water body where weeds exist. Coverage is essential for effective control as all floating weeds need to be exposed to lethal concentrations in all parts of the water body. Any untreated escapes or re-introductions of plants that were not treated will reestablish in areas where surface weeds had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

Application of this product during early morning hours may enhance weed control. When applying to densely packed actively growing surface weeds, ensure adequate coverage. Rapid decomposition of vegetation resulting from herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat floating surface weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with 2,4-D, diquat, glyphosate or other registered foliar applied herbicides for enhanced control of floating and emergent weeds.

Consult a manufacturer's label for specific rate restrictions and weeds controlled. Always follow the most restrictive label restrictions and precautions for all products used when making an applications involving tank mixes.

DIRECTIONS FOR USE
TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS

This product will control submersed and floating weeds listed in Table 3, *Submersed and Floating Weeds Controlled by Subsurface Application*, when applied subsurface with appropriate equipment.

Table 3. Submersed and Floating Weeds Controlled by Subsurface Application

Common Name	Scientific Name
Coontail	*Ceratophyllum demersum*
Duckweed	*Lemna* spp.
Fanwort	*Cabomba caroliniana*
Hydrilla	*Hydrilla verticillata*
Hygrophila	*Hygrophila polysperma*
Naiad, Southern	*Najas guadalupensis*
Pondweed, Curlyleaf	*Potamogeton crispus*
Pondweed, Sago	*Potamogeton pectinatus*
Pondweed, Variable-Leaf	*Potamogeton diversifolius*
Water Fern	*Salvinia* spp.
Water Lettuce	*Pistia stratiotes*
Watermeal	*Wolffia* spp.
Watermilfoil, Eurasian	*Myriophyllum spicatum*
Watermilfoil, Variable-Leaf	*Myriophyllum heterophyllum*

Subsurface Treatment
Apply this product at a rate that will produce an initial concentration of 200 to 400 ppb (of active ingredient flumioxazin) in the water column.

This product is rapidly absorbed by target plants, but also breaks down quickly in water with a pH greater than 8.5. The pH of water surrounding mats of submersed vegetation can exceed 8.5 by early to mid-day, due to photosynthetic processes. Application of this product under these conditions may provide only partial weed control, and regrowth is likely. For best control, apply this product in a minimum of 30 gallons of water per acre in the early morning to actively growing weeds and early in the season before surface matting occurs. Complete coverage and sufficient contact time of submersed weeds with this product is required for optimal performance. Application of this product with subsurface trailing hoses designed to distribute the herbicide within the plant stand will provide more effective and longer term control of submersed weeds. Use Table 3, *Subsurface Application Rates* to determine the amount of this product needed to achieve desired concentration at different water depths. Use higher concentrations when weed biomass is heavy and/or weeds are more mature and topped out. Any untreated plants that are left in the water column can re-infest treated areas that had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

When applying this product to densely packed actively growing submersed weeds, a rapid decomposition of vegetation resulting from herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat submersed weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with other registered submersed applied herbicides for enhanced control of submersed and floating weeds.

Application Equipment for Water Column Treatment
To improve distribution in the water column and ensure adequate coverage, when possible apply this product with subsurface trailing hoses in order to place the herbicide under the surface and throughout the biomass of aquatic vegetation. Keep swath width to a minimum in order to maximize contact with submersed aquatic vegetation. In small shallow water bodies, surface sprays may be required to apply this product. Apply by backpack or handgun sprayer or other application equipment that will ensure adequate coverage of target plant.

Information on Hydrilla Control in Florida
Apply this product as a subsurface treatment for hydrilla control. For best control of hydrilla apply during the late Winter/early Spring and/or early to late Fall. Efficacy of this product will be enhanced at these timings due to lower potential biomass present and lower pH of the water. If applied to mature topped out hydrilla, this product will cause some discoloration and loss of growing tips, but regrowth will be rapid.

Tank mixing this product with other registered herbicides is recommended, especially if hydrilla is approaching maturity or biomass is heavy.

Subsurface Application Rates

Water Depth (feet)	Pints of This Product Required Per Surface Acre to Achieve Desired Water Concentration		
	200 ppb	300 ppb	400 ppb
1	1.1	1.6	2.1
2	2.1	3.2	4.2
3	3.2	4.8	6.4
4	4.2	6.4	8.5
5	5.3	8.0	10.6

Example: to achieve an initial concentration of 200 ppb of flumioxazin in a 4 foot deep water column, apply 4.2 pints of this product per surface acre.

BARE GROUND NON-CROP AREAS

DIRECTIONS FOR USE
TO MAINTAIN BARE GROUND NON-CROP AREAS

This product, when used as directed, can be used for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed-free. Apply this product only to:

- Bare ground under guard rails, above-ground pipelines, and railroad beds, railroad yards and surrounding areas
- Bare ground in parking and storage areas, plant sites, substations, pumping stations, and tank farms
- Bare ground areas of airports, brick yards, industrial plant sites, lumber yards, military installations, and storage areas
- Bare ground around farm buildings, and along ungrazed fence rows, wind breaks and shelter belts
- Road surfaces, improved roadside areas and gravel shoulders.

This product offers residual and postemergence control of susceptible broadleaf and grass weeds as well as additional mode of action to assist in the control of ALS (acetolactate synthase) resistant weeds. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. The length of residual control is dependent on the rate applied as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply to moist or wet desirable plant foliage.
- Do not apply within 300 feet of non-dormant pome or stone fruit crops.
- Do not re-apply this product within 30 days.

USE PRECAUTIONS

- Treatment of powdery, dry soil or light sandy soil, or light sandy soil when there is little to no likelihood of rainfall soon after may result in off target movement and possible damage to actively growing susceptible crops when soil particles are moved by wind or water. Do not apply when these soil and environmental conditions are present.

PREEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre as a preemergence application. Make preemergence (to weed emergence) applications of this product to a weed free soil surface. Preemergence applications of this product must be completed prior to weed emergence.

POSTEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 quart per acre crop oil concentrate). The addition of an adjuvant enhances this product activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product. Emerged weeds are controlled postemergence with this product, however, translocation of this product within a weed is limited, and control is affected by spray coverage and by the addition of an adjuvant. The most effective postemergence weed control with this product occurs when applied in combination with a surfactant to weeds less than 2 inches in height.

TURF & ORNAMENTAL SITES

DIRECTIONS FOR USE

This product is a preemergence and early postemergence herbicide for control of selected grass and broadleaf weeds in and around ornamental woody shrubs, deciduous trees and conifers (including Christmas trees) grown outdoors in containers or in the field (in ground), to maintain non-crop areas and dormant Bermudagrass. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses.

This product controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not apply in enclosed greenhouse structures if plants are present.
- Do not move plants for 24 hours into enclosed greenhouses until the area treated with this product has been watered.
- Do not apply when weather conditions favor spray drift from treated areas.
- Do not graze treated fields or hay to livestock.
- Do not incorporate into soil after application.
- Do not apply this product through any type of irrigation system.
- Do not apply when plants are under stress from insects, diseases, animals or winter injury, planting shock or any other stresses.
- Only apply to healthy established trees and ornamentals.

IN ESTABLISHED CONTAINER AND FIELD GROWN CONIFERS (INCLUDING CHRISTMAS TREES)

DIRECTIONS FOR USE

Apply this product as a single or split application to established container and field grown conifers, which includes applications to Christmas tree plantations. The conifers listed in Table 5 have exhibited tolerance to this product only when the product is applied to dormant or hardened off plant material. If applied over the top of plant foliage, apply this product before spring bud break or after conifers have sufficiently hardened off. During periods of cool, cloudy weather, use caution to ensure conifers have hardened off prior to herbicide application. Do not apply to conifers within 1 year of seedling emergence.

PREEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 pound ai per acre) of this product per broadcast acre before weeds emerge. Apply to weed free, established conifers grown in containers or in the field (in ground). If possible, irrigate treated area with 0.5 to 0.75 inch of water immediately following application. This product may be sprayed directly over conifers listed in Table 5, provided bud break has not occurred or plants are hardened off. Needle burn may be observed on new flush if plants are actively growing at time of application. However, this product will typically not effect subsequent growth. If conifers are not dormant or hardened off at time of application, and foliar injury cannot be tolerated, apply this product as a directed spray, taking care to minimize direct contact or drift of sprays onto foliage. Mechanically incorporating this product after application will disturb soil surfaces, which may reduce herbicidal efficacy. When applied before weed germination, this product will control broadleaf and grassy weeds listed in Table 1.

POSTEMERGENCE APPLICATION

Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre after weeds have emerged. This product may be sprayed directly over conifers listed in Table 5, provided bud break has not occurred or plants are hardened off. Needle burn may be observed on new flush if plants are actively growing at time of application. However, this product will typically not affect subsequent growth. If conifers are not dormant or hardened off at the time of application, and foliar injury cannot be tolerated, apply this product as a directed spray, taking care to minimize direct contact or drift of sprays onto foliage.

If applied when weeds are actively growing and no larger than 2 inches in height, this product will provide postemergence control of broadleaf weeds and grasses listed in Table 1. Postemergence control of this product may be more effective with certain weed species, and may not control mature, stressed or hardened off weeds that are not actively growing at the time of application.

TOLERANT CONIFERS

This product may be applied to the conifer species listed in Table 5. If a desired conifer species is not listed in Table 5, evaluate the safety of this product on a small number of plants under commercial growing conditions, and monitor plant response for four to six weeks for phytotoxicity. Testing this product on a small number of plants will determine if this product can be used safely on a widespread basis.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.

- Do not re-apply this product within 30 days.

TABLE 5 - TOLERANT CONIFER TREE SPECIES

COMMON NAME	SCIENTIFIC NAME
Arborvitae	
American	*Thuja occidentalis*
Oriental	*Thuja orientalis*
Fir	
Concolor	*Abies concolor*
Cork Bark	*Abies lasiocarpa*
Douglas	*Pseudotsuga menzesii*
Fraser	*Abies fraseri*
Grand	*Abies grandis*
Noble	*Abies procera*
Turkish	*Abies bommuelleriana*
Hemlock	
Eastern	*Tsuga Canadensis*
Western	*Tusga heterophylla*
Juniper	
Blue Star	*Juniperus scopularum*
Creeping	*Juniperus horizontalis*
Japanese Garden	*Juniperus chinensis*
Tamarix	*Juniperus Sabina*
Pine	
Austrian	*Pinus nigra*
Eastern White	*Pinus strobes*
Jack	*Pinus banksiana*
Japanese Black	*Pinus thunbergiana*
Loblolly	*Pinus taeda*
Lodgepole	*Pinus contorta*
Longleaf	*Pinus palustris*
Mugo	*Pinus mugo*
Ponderosa	*Pinus ponderosa*
Sand	*Pinus clausa*
Scotch	*Pinus sylvestris*
Shortleaf	*Pinus echinata*
Slash	*Pinus elliottii*
Virginia	*Pinus virginiana*
Spruce	
Blue	*Picea pungens*
Dwarf Alberta	*Picea glauca conica*
Norway	*Picea abies*
Sitka	*Picea sitchensis*
Yew	
English	*Taxus baccata*
Japanese	*Taxus cuspidate*

IN CONTAINER AND FIELD DECIDUOUS TREES AND NON-BEARING FRUIT AND NON-BEARING NUT TREES

DIRECTIONS FOR USE

This product may be applied as single or split applications to container and field grown deciduous trees with an established root system. The deciduous trees listed in Table 3 have exhibited tolerance to this product only when applied to the soil and base of plants. Application of this product to deciduous foliage or green bark may result in unacceptable injury.

This product may be applied to established (or transplanted) container and field grown deciduous trees. Do not apply to trees that are less than one year old or have been transplanted less than one year, unless completely protected by non-porous wraps, grow tubes, waxed protectors or other forms of protection to young foliage and/or bark. Do not harvest fruit or nuts from treated trees within one

year of application.

IMPORTANT: Direct application of this product to the soil surface and away from plant foliage and bark. Avoid direct spray contact on plant surfaces, foliage and green bark or injury may result. Application of this product after bud swell may cause injury if herbicide contacts foliage. Avoid application under environmental conditions that favor drift to non-targeted areas.

PREEMERGENCE APPLICATION
Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre as a preemergence (to weed emergence) application. Apply this product to weed free deciduous trees grown in containers or in the field (in-ground). If possible, irrigate treated area with 0.5 to 0.75 inch of water immediately following application. This product may be applied to the soil surface and base of deciduous trees, provided that direct and indirect (drift) applications to plant foliage, flowers and green bark does not occur. Mechanically incorporating this product will disturb soil surfaces, which may reduce herbicidal efficacy. The use of spray shields that limit exposure of foliage and bark to this product is suggested. When applied before weed germination, this product will control broadleaf and grassy weeds. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses.

POSTEMERGENCE APPLICATION
Apply 8 to 12 fl oz (0.25 to 0.38 lb ai) per acre of this product per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant). Make postemergence (to weed emergence) applications of this product when weeds are actively growing and are no larger than 2 inches in height. The addition of a surfactant enhances this product activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of this product. When applied after weed germination, this product will provide preemergence and postemergence control of broadleaf weeds and grasses. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses

Postemergence control of this product may be more effective with certain weed species, and may not control mature, stressed or hardened off weeds that are not actively growing at the time of application.

TOLERANT DECIDUOUS TREES, NON-BEARING FRUIT AND NON-BEARING NUT TREES
This product may be applied as a directed spray to the deciduous, non-bearing fruit and non-bearing nut trees species listed in Table 6. If a desired tree species is not listed in Table 6, evaluate the safety of this product on a small number of plants under commercial growing conditions and monitor plant response for four to six weeks for phytotoxicity. Testing this product on a small number of plants will determine if this product can be used safely on a widespread basis.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per acre per year.
- Do not re-apply this product within 30 days.

TABLE 6 – TOLERANT DECIDUOUS TREE SPECIES

COMMON NAME	SCIENTIFIC NAME
Apricot*	*Prunus* spp.
Ash	*Fraxinus* spp.
Birch	*Betula* spp.
Buckeye	*Aesculus* spp.
Cherry*	*Prunus* spp.
Chestnut	*Castanea* spp.
Citrus*	*Citrus* spp.
Dogwood	*Cornus* spp.
Eucalyptus	*Eucalyptus* spp.
Ginkgo	*Ginkgo* spp.
Hawthorn	*Crataegus* spp.
Honeylocust	*Gleditsia* spp.
Larch	*Larix* spp.
Lilac	*Syringa* spp.
Maple**	*Acer* spp.
Myrtle, Crepe	*Lagerstroemia indica*
Oak	*Quercus* spp.
Poplar	*Populus* spp.
Peach*	*Prunus* spp.
Plum*	*Prunus* spp.
Pecan*	*Carya* spp.
Redbud	*Cercis Canadensis*
Sweetgum	*Liquidambar styraciflua*

Sycamore	*Plantanus* spp.
Walnut, Black	*Juglans nigra*
Willow	*Salix* spp.

**Non-bearing trees only.*
***Not for use on maple trees used for production of maple sap or syrup.*

AROUND ESTABLISHED WOODY LANDSCAPE ORNAMENTALS AND TO MAINTAIN NON-CROP AREAS

DIRECTIONS FOR USE

Application of this product in the vicinity of ornamental plants is limited to directed sprays around well established woody shrubs and trees including azalea, euonymus, holly, and the conifers and deciduous trees listed in Tables 5 and 6. This product may also be applied to maintain weed control in non-crop areas in apartment complexes, fence rows, gravel surfaces and driveways, ground mats and pads prior to the addition of containerized plants, golf courses, lumberyards, office complexes, parks, parking areas, recreational sites, schools, sidewalks, storage areas, grass water waterways, rain gardens, and other similar industrial sites. Do not apply this product within any enclosed structure in residential or commercial landscapes.

This product offers postemergence and residual control of susceptible grasses and broadleaf weeds, as well as additional mode of action to assist in the control of resistant weeds. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. The length of residual control is dependent on the rate applied, rainfall and temperature. Length of residual control will decrease as temperature and precipitation increase.

IMPORTANT: Contact with spray or spray drift of this product may cause severe injury or destruction of certain desirable plants, especially herbaceous species including bedding plants or direct seeded annual and perennial flowers. Therefore, do not apply this product over the top of ornamental plants growing in the landscape, and do not allow spray of this product to contact, drift or splash from soil onto the foliage, green stems, exposed roots or fruit of desirable plants. Avoid application of this product under conditions that favor drift of sprays onto desired ornamentals or turfgrass. The use of spray shields that limit the plant exposure to this product is directed when applying this product near desirable plants.

Do not apply this product around landscape ornamentals until plants have been actively growing for at least 30 days after transplanting, or for at least two months before ornamentals will be planted into treated areas.

PREEMERGENCE APPLICATION (NO WEEDS ARE PRESENT)
Mix 0.18 to 0.27 fl oz (5.3 to 8.1 mls) of this product per gallon of spray solution, and apply 1 gallon of spray solution to 1,000 square feet (8 to 12 fl oz/A) prior to weed germination (see Backpack Application table for more options and details). Apply this product to weed free soil, mulch or gravel surfaces. Moisture is necessary to activate this product on soil for residual weed control. When applied before weed germination, this product will control the broadleaf weeds and grasses listed in Table 1.

Established landscape ornamentals have shown tolerance to this product **only** when applied to the soil at the base of the plant. For maximum plant safety when using around desirable ornamentals, direct applications of this product to the soil, and leave a sufficient untreated buffer to ensure spray solution does not contact desired plants. Do not harvest fruit or nuts from treated trees within one year of application.

POSTEMERGENCE APPLICATION (WEEDS ARE PRESENT)
Mix 0.18 to 0.27 fl oz (5.3 to 8.1 mls) of this product per gallon of spray solution (8 to 12 fl oz/A), and apply 1 gallon of spray solution to 1,000 square feet to actively growing weeds (see calibration chart for backpack sprayers). Tank mixing this product with glyphosate will increase the spectrum of postemergence weed control over this product alone, provide faster postemergence weed control than glyphosate alone, and provide preemergence and postemergence control of the broadleaf weeds and grasses listed in Table 1.

Established landscape ornamentals have shown tolerance to applications of this product plus glyphosate **only** when applied to the soil at the base of the plant, and sprays do not directly contact or drift onto desirable plants. For maximum plant safety when using around desirable ornamentals, direct applications of this product plus glyphosate towards the soil, and leave a sufficient non-treated buffer to ensure spray solution does not contact desired plants.

Thorough spray coverage of weeds is necessary to maximize weed control. Spray coverage must be uniform, but do not spray to the point of runoff.

IMPORTANT: Completely read and follow the glyphosate label. When tank mixing this product with other products, always follow the most restrictive use conditions on either label.

USE RESTRICTIONS

- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Do not apply more than 2 applications per year.
- Do not re-apply this product within 30 days.
- Do not harvest fruit or nuts from treated trees within one year of application.

ON DORMANT BERMUDAGRASS GROWN ON RESIDENTIAL SITES, GOLF COURSES, SOD PRODUCTION AND SIMILAR AREAS

DIRECTIONS FOR USE

This product may be applied as a single or split application to well established dormant Bermudagrass. This product will provide preemergence and early postemergence control of annual bluegrass, chickweed, henbit and other winter annual weeds. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. This product will also provide preemergence control of crabgrass, goosegrass and other summer annual weeds. This product may be applied to dormant turfgrass in such areas as apartment complexes, golf courses, sod farms, roadsides, sports fields, campgrounds, office complexes, parks, parking areas, recreational sites, schools, residential turf and other similar sites. Bermudagrass exhibits tolerance to this product only when applied to semi-dormant or completely dormant turf in the late fall and before active growth resumes in the late winter/early spring. Application of this product to actively growing turfgrass (warm season and cool season) or during green-up may cause unacceptable injury.

BROADCAST APPLICATIONS

Apply 8 to 12 fl oz of this product per broadcast acre as a preemergence (to weed emergence) application. If weeds are present at the time of application apply this product plus an adjuvant (0.25% v/v non-ionic surfactant). Make postemergence (to weed emergence) applications of this product when weeds are actively growing and no larger than 2 inches in height. Thorough spray coverage is necessary to maximize the postemergence activity of this product. When applied after weed germination, this product will provide preemergence and postemergence control of broadleaf weeds and grasses. See Table 1 under WEEDS CONTROLLED section for a list of broadleaf weeds and grasses. Postemergence weed control with this product may be more effective on certain weed species, and may not control mature, stressed or hardened off weeds that are not actively growing at the time of application.

This product will provide best control of annual bluegrass when applied in the late fall while plants are small. Control may be less effective when applied in the winter during under cold conditions when weeds are not actively growing. A second application of this product may be required to provide adequate season-long annual bluegrass control. This product will provide best control of crabgrass, goosegrass and other summer annual weeds when applied in the late winter before turfgrass resumes active growth.

TANK MIXING WITH OTHER TURFGRASS HERBICIDES

This product may be tank mixed with Manor Herbicide (metsulfuron-methyl).

USE AROUND BENTGRASS AND POA GREENS

This product has limited potential for lateral movement on level terrain, but can potentially move down slope after excessive rainfall and affect sensitive turf species including bentgrass and *Poa trivialis*. When applied upslope from bentgrass greens or Bermudagrass greens overseeded with *Poa trivialis,* allow an adequate buffer zone between greens and the treated area. If uncertain about the size of the buffer, 15 feet is suggested.

Risk of movement is decreased when this product is applied to soil at less than field capacity. Avoid application when heavy rain is imminent or when the soil is saturated.

USE RESTRICTIONS

- Do not apply more than 2 applications at 12 fl oz (0.38 lb ai) per acre or 3 applications at 8 fl oz (0.25 lb ai) per year.
- Do not apply more than 12 fl oz (0.38 lb ai) of this product per acre per application.
- Do not apply more than 24 fl oz (0.75 lb ai) of this product per acre per year.
- Exercise good judgment and caution when applying to dormant turfgrass until familiarity is gained with this product.
- Do not apply to golf course putting greens.
- Do not apply to warm season turfgrass that has been overseeded with cool season turfgrass (ex. perennial rye, *Poa trivialis*).
- Do not irrigate within 1 hour before or after application.
- Do not apply if rain is expected within 1 hour after application.
- Do not mow turfgrass within 12 hours after application.
- Do not apply within 30 days prior to cutting or lifting sod.
- Do not re-apply this product within 30 days.
- Do not apply in fall before turfgrass has ceased active growth or in late winter/ early spring after turfgrass has resumed active growth.

USE PRECAUTIONS

- Allow 8 weeks between application and seeding or sodding of turfgrass.

 RVmmddyy