

ACCEPTED  
FOR REGISTRATION

November 9, 2018

Classified for  
"RESTRICTED USE"  
in New York State  
under 6NYCRR Part 326

New York State Department  
of Environmental Conservation  
Division of Materials Management  
Pesticide Product Registration

DOC ID 559508

 **ALLIGARE**

FLUMIOXAZIN GROUP 14 HERBICIDE

# FLUMIGARD™

## Herbicide

FOR USE IN CONTAINER AND FIELD GROWN CONIFERS (INCLUDING CHRISTMAS TREES) AND DECIDUOUS TREES, AROUND ESTABLISHED WOODY ORNAMENTALS IN LANDSCAPES, TO MAINTAIN BARE GROUND NON-CROP AREAS, CONIFER AND POPLAR RE-FORESTATION SITES\*, AND DORMANT TURFGRASS, FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS (TO CONTROL FLOATING AND EMERGED WEEDS USING SURFACE AND SUBSURFACE APPLICATIONS)

\*Not approved for use in conifer and poplar re-forestation sites in California.

<b>ACTIVE INGREDIENT:</b>	<b>By Wt</b>
Flumioxazin*	51.0%
<b>OTHER INGREDIENTS:</b>	49.0%
<b>TOTAL:</b>	100.0%

\*(2-[7-flouro-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)

Alligare FLUMIGARD™ Herbicide is a water dispersible granule containing 51% active ingredient.

EPA Reg. No. 81927-68 EPA Est. No. 81927-AL-001<sup>PM</sup>; 37429-GA-001<sup>BT</sup>  
Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

Manufactured for: Alligare, LLC  
13 N. 8th Street • Opelika, AL 36801

**Net Weight: 5 lbs.**

### FIRST AID

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**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 1-800-424-9300 for emergency medical treatment information.

See inside label booklet for Precautionary Statements and Directions for Use.



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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing dust and spray mist. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes and socks

### USER SAFETY REQUIREMENTS

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

### USER SAFETY RECOMMENDATIONS

#### Users should:

- Remove clothing 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

#### Terrestrial Uses

This product is toxic to non-target plants and aquatic invertebrates. 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 neighboring 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 and must be used 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.

### Aquatic Uses

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 to water except as specified on the label. Drift and runoff may be hazardous to non-target plants and aquatic organisms in neighboring areas, if not used in accordance to label directions. 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.

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

## DIRECTIONS FOR USE

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

**READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH 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, 40 CFR Part 170. This Standard contains requirements for the protections 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 statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.**

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

- Coveralls
- Waterproof gloves
- 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 Standards for agricultural pesticides (40 CFR, Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

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

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

#### 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 and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

#### PRODUCT INFORMATION

##### *Terrestrial Uses*

Alligare FLUMIGARD Herbicide 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 bare ground non-crop areas, conifer and poplar reforestation and dormant warm season turfgrass.

Alligare FLUMIGARD Herbicide 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.

Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide. However, Alligare FLUMIGARD Herbicide 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 advised 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 Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide has investigated the safety to plants not listed on the label.

#### **TERRESTRIAL USE RESTRICTIONS**

- Do not apply more than 12 oz (0.38 lb ai/A) of Alligare FLUMIGARD Herbicide per acre per application.
- Do not apply more than 24 oz (0.76 lb ai/A) of Alligare FLUMIGARD Herbicide per acre per year.
- Do not apply within 300 feet of non-dormant pome or stone fruit crops.
- Do not apply in enclosed greenhouse structures if plants are present.
- Do not move plants for 24 hours into enclosed greenhouses until the Alligare FLUMIGARD Herbicide treated area 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.

#### **TERRESTRIAL 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.

#### **Aquatic Uses**

Alligare FLUMIGARD Herbicide 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.

Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide to public aquatic areas may require special approval and/or permits. Consult with local state agencies, if required.

#### **AQUATIC USE RESTRICTIONS**

- Do not exceed 400 ppb of Alligare FLUMIGARD Herbicide during any one application.
- Do not apply to intertidal or estuarine areas.
- Do not use in water utilized for crawfish farming.
- Do not re-treat the same section of water with Alligare FLUMIGARD Herbicide more than 6 times per year.
- Do not re-treat the same section of water within 28 days of application.

There is no post-application holding restriction against use of treated water for drinking or recreational purposes (e.g., swimming, fishing). In areas with dense weed vegetation, only treat ½ the water body at one time and wait 10-14 days before treating the remaining area. Treated water may not be used for irrigation purposes on food crops until at least five (5) days after application. 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

### RESISTANCE MANAGEMENT

For resistance management, Alligare FLUMIGARD Herbicide is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to Alligare FLUMIGARD Herbicide and other Group 14 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same use site. Follow appropriate resistance-management strategies.

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

- Avoid the consecutive use of Alligare FLUMIGARD Herbicide or other target site of action Group 14 herbicides that might have a similar target site of action, on the same weed species.
- Use tank mixtures or premixes with herbicides from different target site of action Groups as long as the involved products are all registered for the same use, have different sites of action and are both effective at the tank mix or prepack rate on the weed(s) of concern.
- Base herbicide use on a comprehensive Integrated Pest Management (IPM) program.
- Scout fields prior to application to identify the weed species present and their growth state to determine if the intended application will be effective.

- Scout fields after application to verify that the treatment was effective and to monitor weed populations for early signs of resistance development.
- Contact your local extension specialist, certified crop advisors and/or manufacturer for herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes.

Suspected herbicide-resistant weeds may be identified by these indicators:

- o Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
- o A spreading patch of non-controlled plants of a particular weed species; and
- o Surviving plants mixed with controlled individuals of the same species.

Report any incidence of non-performance of this product against a particular weed species to your Alligare LLC retailer, representative or call 888-252-4427. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemicals means to remove escapes, as practical, with the goal of preventing further seed production.

### **PREEMERGENCE APPLICATION**

Preemergence weed control with Alligare FLUMIGARD Herbicide is most effective when applied to clean, weed free soil surfaces prior to weed emergence. Moisture is necessary to activate Alligare FLUMIGARD Herbicide on soil for residual weed control. Dry weather following application of Alligare FLUMIGARD Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Alligare FLUMIGARD Herbicide will control susceptible germinating weeds.

### **POSTEMERGENCE APPLICATION**

The most effective postemergence weed control with Alligare FLUMIGARD Herbicide occurs when applied in combination with a surfactant to weeds less than 2 inches in height. Apply Alligare FLUMIGARD Herbicide only to actively growing weeds. Applying Alligare FLUMIGARD Herbicide under conditions that do not promote active weed growth will reduce herbicide effectiveness. Alligare FLUMIGARD Herbicide is most effective when applied under sunny conditions at temperatures above 65°F.

Alligare FLUMIGARD Herbicide is rainfast one hour after application. Do not apply if rain is expected within one hour of application or efficacy may be reduced.

### **SOIL CHARACTERISTICS**

Application of Alligare FLUMIGARD Herbicide 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 when using boom sprayers, use at least 10 gals of spray solution per acre. When making backpack applications, apply 50 to 100 gals of spray solution per acre. Nozzle selection must meet manufacturer's gallonage and pressure specifications for preemergence herbicide application.

### **POSTEMERGENCE APPLICATION**

To ensure thorough coverage when using boom sprayers, apply at least 15 gals of spray solution per acre. Apply at least 20 gals per acre when using a boom sprayer if dense vegetation or heavy residue is present on the soil surface. When applying with a backpack sprayer, apply 1 gal of spray solution per 500 to 1,000 sq ft. Nozzle selection must meet manufacturer's gallonage and pressure specifications for postemergence herbicide application.

## **ADDITIVES**

### **POSTEMERGENCE APPLICATION**

When applying Alligare FLUMIGARD Herbicide after weeds emerge, mix with an agronomically approved adjuvant. Mix Alligare FLUMIGARD Herbicide with a crop oil concentrate that contains at least 15% emulsifiers and 80% oil or a non-ionic surfactant containing at least 80% active ingredient when applying Alligare FLUMIGARD Herbicide as part of a postemergence weed control program. Verify mixing compatibility by a jar test before using. Do not mix Alligare FLUMIGARD Herbicide with a surfactant when applying over the top of dormant woody ornamentals or conifer trees.

**Buffering Agents and Water Conditioners** - A spray-grade nitrogen source (either ammonium sulfate at 2.0 to 2.5 lb/A or a 28 to 32% nitrogen solution at 1 to 2 qts/A) 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 ALLIGARE FLUMIGARD HERBICIDE**

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

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

2. Add 3 grams (approximately 1 level tsp) of Alligare FLUMIGARD Herbicide for the 8 oz/A rate or 4 grams (approximately 1 ½ tsp) for 12 oz/A rate to the jar. Gently mix until product disperses.
3. Add 60 ml (4 Tbsp or 2 fl oz) of additive to the quart jar and gently mix.
4. If nitrogen is being used, add 16 ml (1 Tbsp) of the 28 to 32% nitrogen source to the quart jar. If ammonium sulfate is being used, add 19 grams of 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 and free of suspended particles. If any of the following conditions are observed question the choice of adjuvant:
  - a) Layer of oil or globules on the solution 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

**Important:** Thoroughly clean spray equipment, including all tanks, hoses, booms, screens and nozzles, after application of Alligare FLUMIGARD Herbicide. Equipment with Alligare FLUMIGARD Herbicide residue remaining in the system may result in crop injury to subsequently treated crops.

## SPRAYER PREPARATION

Before applying Alligare FLUMIGARD Herbicide, 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 spray equipment according to the manufacturer's directions for the last product used before the equipment is used to apply Alligare FLUMIGARD Herbicide. If two or more products were tank mixed prior to Alligare FLUMIGARD Herbicide application, follow the most restric-

tive cleanup procedure on the label of all products.

## MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. To ensure a uniform spray mixture, pre-slurry the required amount of Alligare FLUMIGARD Herbicide with water prior to addition to the spray tank. Use a minimum of 1 gal of water per 10 oz of Alligare FLUMIGARD Herbicide.
3. While agitating, slowly add the pre-slurried Alligare FLUMIGARD Herbicide to the spray tank. Agitation creates a rippling or rolling action of the water surface.
4. If tank mixing Alligare FLUMIGARD Herbicide 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.
5. Add any required adjuvants.
6. Fill spray tank to desired level with water. **Continue agitation until spray solution has been applied.**
7. Mix only the amount of spray solution that can be applied the day of mixing. **Apply Alligare FLUMIGARD Herbicide within 12 hours of mixing.**

## SPRAYER CLEANUP

Spray equipment must be cleaned each day following Alligare FLUMIGARD Herbicide application. After Alligare FLUMIGARD Herbicide is applied, the following steps must be used to clean the spray equipment:

- Completely drain the spray tank and rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
- Fill the tank with clean water and flush all hoses, booms, screens and nozzles.
- Top off tank with clean water and household ammonia. Use 1 gal of 3% household ammonia for every 100 gals of water.
- Circulate through sprayer for 5 minutes.
- Then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.

- Loosen any diaphragms before flushing the spray system, allowing cleaning solution to spray through the open diaphragm.
- Drain tank completely.
- Add enough clean water to the spray tank to flush hoses, booms, screens and nozzles for 2 minutes.
- Remove all nozzles and screens and rinse them with clean water.

**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 Alligare FLUMIGARD Herbicide, and Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide per acre.

**HANDGUN APPLICATION**

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

**BACKPACK APPLICATION**

When applying Alligare FLUMIGARD Herbicide with a backpack sprayer follow all above restrictions. Calibrate backpack sprayers to deliver 1 gal of spray solution per 500 to 1,000 sq ft.

**For Backpack Applications of Alligare FLUMIGARD Herbicide at 10 oz per acre**

Application Volume	Amount of Alligare FLUMIGARD Herbicide to mix in 1 gal of water	Amount of Alligare FLUMIGARD Herbicide to mix in 2 gals of water	Amount of Alligare FLUMIGARD Herbicide to mix in 3 gals of water
1 gal per 500 sq ft (= 87 GPA)	1 ¼ tsp	2 ½ tsp	3 ¾ tsp
1 gal per 750 sq ft (= 58 GPA)	1 ¾ tsp	3 ½ tsp	5 ¼ tsp
1 gal per 1,000 sq ft (= 43.5 GPA)	2 ½ tsp	5 tsp	7 ½ tsp

1 level teaspoon (tsp) holds 2.8 grams of Alligare FLUMIGARD Herbicide.

Example: Applicator wants to spray 1 gal of Alligare FLUMIGARD Herbicide solution per 1,000 sq ft of ground bed, and wants to mix up 2 gals of spray solution. Therefore, mix 5 teaspoons of Alligare FLUMIGARD Herbicide in 2 gals of water.



## AERIAL APPLICATION

To obtain satisfactory weed control with aerial application of Alligare FLUMIGARD Herbicide, coverage must be uniform. Do not spray when drift is possible or when wind velocity is more than 10 mph. Avoid spraying Alligare FLUMIGARD Herbicide 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**

Apply Alligare FLUMIGARD Herbicide in 5 to 10 gals of water per acre, with a maximum spray pressure of 40 PSI. Application at less than 5 gals 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 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 directions.

## CALIBRATION TABLE

ALLIGARE FLUMIGARD HERBICIDE RATES OZ/A	ALLIGARE FLUMIGARD HERBICIDE RATES GRAMS/GAL	ALLIGARE FLUMIGARD HERBICIDE RATES PER GAL
8	2.3	¾ tsp
10	2.8	1 level tsp
12	3.4	1 ¼ tsp

## SPRAY DRIFT MANAGEMENT

### SPRAY DRIFT REDUCTION

#### *Terrestrial Uses*

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. 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.
- All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.
- For ground boom applications, apply with nozzle height no more than 4 ft above the ground or crop canopy.

### **Aquatic Uses**

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 Alligare FLUMIGARD Herbicide 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, they must be observed.

### **TERRESTRIAL WEEDS CONTROLLED**

When Alligare FLUMIGARD Herbicide is applied preemergence or postemergence at specified rates and weed stages, the following grasses and broadleaf weeds are controlled.

**TABLE 1. WEEDS CONTROLLED BY ALLIGARE FLUMIGARD HERBICIDE**

<b>Common Name</b>	<b>Scientific Name</b>
Alyssum, Hoary	<i>Berteroa incana</i>
Amaranth	
Palmer	<i>Amaranthus palmeri</i>
Spiny	<i>Amaranthus spinosus</i>
American Burnweed	<i>Erechtites hieracifolia</i>
Barnyardgrass*	<i>Echinochloa crus-galli</i>
Beggarweed, Florida	<i>Desmodium tortuosum</i>
Bittercress, Hairy	<i>Cardamine hirsuta</i>
Bluegrass, Annual	<i>Poa annua</i>
Burclover, California	<i>Medicago polymorpha</i>
Carpetweed	<i>Mollugo verticillata</i>
Chamberbitter	<i>Phyllanthus urinaria</i>
Chickweed	
Common	<i>Stellaria media</i>
Mouseear	<i>Cerastium vulgatum</i>
Crabgrass	
Large*	<i>Digitaria sanguinalis</i>
Smooth*	<i>Digitaria ischaemum</i>
Southern*	<i>Digitaria ciliaris</i>
Croton, Tropic	<i>Croton glandulosus</i> var. <i>septentrionalis</i>
Dandelion*	<i>Taraxacum officinale</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Doveweed	<i>Murdannia nudiflora</i>
Eclipta	<i>Eclipta prostrata</i>
Filaree, Redstem*	<i>Erodium cicutarium</i>

Common Name	Scientific Name
Foxtail	
Bristly*	<i>Setaria verticillata</i>
Giant*	<i>Setaria faberi</i>
Green*	<i>Setaria viridis</i>
Yellow*	<i>Setaria glauca</i>
Galinsoga, Hairy	<i>Galinsoga ciliata</i>
Geranium, Carolina	<i>Geranium carolinianum</i>
Goosegrass*	<i>Eleusine indica</i>
Groundsel, Common	<i>Senecio vulgaris</i>
Groundsel Tree	<i>Baccharis halimifolia</i>
Henbit	<i>Lamium amplexicaule</i>
Horseweed*	<i>Conyza canadensis</i>
Indigo, Hairy	<i>Indigofera hirsuta</i>
Ivy, Ground*	<i>Glechoma hederacea</i>
Jimsonweed	<i>Datura stramonium</i>
Kochia	<i>Kochia scoparia</i>
Kyllinga, Green*	<i>Kyllinga brevifolia</i>
Ladysthumb	<i>Polygonum persicaria</i>
Lambsquarters, Common	<i>Chenopodium album</i>
Liverwort	<i>Marchantia polymorpha</i>
Lovegrass, California*	<i>Eragrostis diffusa</i>
Mallow	
Common	<i>Malva neglecta</i>
Little	<i>Malva parviflora</i>
Venice	<i>Hibiscus trionum</i>
Marsh Parsley	<i>Apium leptophyllum</i>
Marsh Yellowcress	<i>Rorippa islandica</i>
Mayweed*	<i>Anthemis cotula</i>
Morningglory	
Entireleaf	<i>Ipomoea hederacea</i> var. <i>integrifolia</i>
Ivyleaf	<i>Ipomoea hederacea</i>
Red/Scarlet	<i>Ipomoea coccinea</i>
Smallflower	<i>Jacquemontia tamnifolia</i>
Tall	<i>Ipomoea purpurea</i>
Moss	<i>Bryum</i> spp.
Mulberry Weed	<i>Fatua villosa</i>
Mustard	
Tumble	<i>Sisymbrium altissimum</i>
Wild	<i>Brassica kaber</i>

Common Name	Scientific Name
Nightshade	
Black	<i>Solanum nigrum</i>
Eastern Black	<i>Solanum ptychanthum</i>
Hairy	<i>Solanum sarrachoides</i>
Northern Willowherb	<i>Epilobium cillatum</i>
Panicum	
Fall*	<i>Panicum dichotomiflorum</i>
Texas*	<i>Panicum texanum</i>
Parsley-Piert	<i>Alchemilla arvensis</i>
Pearlwort, Birdseye*	<i>Sagina procumbens</i>
Pennycress, Field	<i>Thlaspi arvense</i>
Phyllanthus, Longstalked	<i>Phyllanthus tenellus</i>
Pigweed	
Prostrate	<i>Amaranthus blitoides</i>
Redroot	<i>Amaranthus retroflexus</i>
Smooth	<i>Amaranthus hybridus</i>
Tumble	<i>Amaranthus albus</i>
Pineappleweed*	<i>Matricaria matricarioides</i>
Plantain	
Broadleaf*	<i>Plantago major</i>
Buckhorn*	<i>Plantago lanceolata</i>
Poinsettia, Wild	<i>Euphorbia heterophylla</i>
Puncturevine	<i>Tribulus terrestris</i>
Purslane, Common	<i>Portulaca oleracea</i>
Pusley, Florida	<i>Richardia scabra</i>
Ragweed	
Common	<i>Ambrosia artemisiifolia</i>
Giant	<i>Ambrosia trifida</i>
Redmaids	<i>Calandrinia ciliata</i>
Redweed	<i>Melochia corchorifolia</i>
Rocket, Yellow	<i>Barbarea vulgaris</i>
Senna, Coffee	<i>Cassia occidentalis</i>
Sesbania, Hemp	<i>Sesbania exaltata</i>
Shepherd's-Purse	<i>Capsella bursa-pastoris</i>
Sida, Prickly (Teaweed)	<i>Sida spinosa</i>
Signalgrass*	<i>Brachiaria platyphylla</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Sowthistle, Annual	<i>Sonchus oleraceus</i>
Spiderwort, Tropical	<i>Commelina benghalensis</i>

Common Name	Scientific Name
Spurge	
Petty	<i>Euphorbia peplus</i>
Prostrate	<i>Euphorbia humistrata</i> Engelm
Spotted	<i>Euphorbia maculata</i>
Starbur, Bristly*	<i>Acanthospermum hispidum</i>
Tassel-flower	<i>Emilia</i> spp.
Thickhead	<i>Crassocephalum crepidoides</i>
Thistle	
Canada*	<i>Cirsium arvense</i>
Russian	<i>Salsola iberica</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Waterhemp	
Common	<i>Amaranthus rudis</i>
Tall	<i>Amaranthus tuberculatus</i>
Woodsorrel, Yellow*	<i>Oxalis stricta</i>

\*Preemergence control only.

### DIRECTIONS FOR USE TO MAINTAIN BARE GROUND NON- CROP AREAS

Alligare FLUMIGARD Herbicide, 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 Alligare FLUMIGARD Herbicide to:

- Bare ground under guard rails, above-ground pipelines, and railroad beds, railroad yards and surrounding area.
- 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 Alligare FLUMIGARD Herbicide.

Alligare FLUMIGARD Herbicide 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 oz (0.25 to 0.38 lb ai/A) of Alligare FLUMIGARD Herbicide per broadcast acre as a preemergence application. Preemergence applications of Alligare FLUMIGARD Herbicide must be completed prior to weed emergence. Moisture is necessary to activate Alligare FLUMIGARD Herbicide on soil for residual weed control. Dry weather following application of Alligare FLUMIGARD Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Alligare FLUMIGARD Herbicide will control susceptible germinating weeds.

#### POSTEMERGENCE APPLICATION

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of Alligare FLUMIGARD Herbicide per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 qt/A crop oil concentrate). The addition of an adjuvant enhances Alligare FLUMIGARD Herbicide activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of Alligare FLUMIGARD Herbicide. Emerged weeds are controlled postemergence with Alligare FLUMIGARD Herbicide, however, translocation of Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide occurs when applied in combination with a surfactant to weeds less than 2 inches in height.

#### AERIAL APPLICATION

- Aerial applications are limited to maintaining weed free railroad beds, railroad yards and surrounding areas and military installations.

#### TANK MIX APPLICATION

In addition to weeds controlled by Alligare FLUMIGARD Herbicide used alone, tank mixtures with other preemergence and postemergence herbicides registered for use in non-crop areas provide a broader spectrum of weed control. Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide tank mix partner. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

#### RESTRICTIONS AND LIMITATIONS

- Do not apply more than 2 applications at 12 oz/A (0.38 lb ai/A) or 3 applications at 8 oz/A (0.25 lb ai/A) per year.
- Do not re-apply Alligare FLUMIGARD Herbicide within 30 days.

#### DIRECTIONS FOR USE IN ESTABLISHED CONTAINER AND FIELD GROWN CONIFERS (INCLUDING CHRISTMAS TREES)

Apply Alligare FLUMIGARD Herbicide 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 2 have exhibited tolerance to Alligare FLUMIGARD Herbicide only when the product is applied to dormant or hardened off plant material. If applied over the top of plant foliage, apply Alligare FLUMIGARD Herbicide 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 oz (0.25 to 0.38 lb ai/A) of Alligare FLUMIGARD Herbicide 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. Alligare FLUMIGARD Herbicide may be sprayed directly over conifers listed in Table 2, 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, Alligare FLUMIGARD Herbicide will typically not affect subsequent growth. If conifers are not dormant or hardened off at time of application, and foliar injury cannot be tolerated, apply Alligare FLUMIGARD Herbicide as a directed spray, taking care to minimize direct contact or drift of spray onto foliage. Mechanically incorporating Alligare FLUMIGARD Herbicide after application will disturb soil surfaces, which may reduce herbicidal efficacy. When applied before weed germination, Alligare FLUMIGARD Herbicide will control broadleaf and grassy weeds listed in Table 1.

#### POSTEMERGENCE APPLICATION

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of Alligare FLUMIGARD Herbicide per broadcast acre after weeds have emerged. Alligare FLUMIGARD Herbicide may be sprayed directly

over conifers listed in Table 2, provided bud break has not occurred or plants are hardened. Needle burn may be observed on new flush if plants are actively growing at time of application. However, Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide as a directed spray, taking care to minimize direct contact or drift of spray onto foliage.

If applied when weeds are actively growing and no larger than 2 inches in height, Alligare FLUMIGARD Herbicide will provide postemergence control of broadleaf weeds and grasses listed in Table 1. Postemergence control of Alligare FLUMIGARD Herbicide 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.

**TANK MIXTURES FOR CONTAINER AND FIELD GROWN CONIFERS**

Tank mixing Alligare FLUMIGARD Herbicide with other preemergence and postemergence herbicides registered for use on conifers may provide a broader spectrum of weed control than Alligare FLUMIGARD Herbicide applied alone. Alligare FLUMIGARD Herbicide may also be applied as part of a postemergence burndown program for control of annual and perennial weeds. Tank mixing Alligare FLUMIGARD Herbicide with glyphosate will increase the speed of burndown compared to glyphosate applied alone. Alligare FLUMIGARD Herbicide 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.

**IMPORTANT:** Completely read and follow the label of any potential Alligare FLUMIGARD Herbicide tank mix partner.

When tank mixing Alligare FLUMIGARD Herbicide with other herbicides, always follow the most restrictive label limitations and precautions on the label of any tank mix partner.

**TOLERANT CONIFERS**

Alligare FLUMIGARD Herbicide may be applied to the conifer species listed in Table 2. If a desired conifer species is not listed in Table 2, evaluate the safety of Alligare FLUMIGARD Herbicide on a small number of plants under commercial growing conditions, and monitor plant response for four to six weeks for phytotoxicity. Testing Alligare FLUMIGARD Herbicide on a small number of plants will determine if Alligare FLUMIGARD Herbicide can be used safely on a widespread basis.

**RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A (0.38 lb ai/A) or 3 applications at 8 oz/A (0.25 lb ai/A) per year.
- Do not re-apply Alligare FLUMIGARD Herbicide within 30 days.

**TABLE 2. TOLERANT CONIFERS**

Common Name	Scientific Name
Arborvitae	
American	<i>Thuja occidentalis</i>
Oriental	<i>Thuja orientalis</i>
Fir	
Concolor	<i>Abies concolor</i>
Cork Bark	<i>Abies lasiocarpa</i>
Douglas	<i>Pseudotsuga menziesii</i>
Fraser	<i>Abies fraseri</i>
Grand	<i>Abies grandis</i>
Noble	<i>Abies procera</i>
Turkish	<i>Abies bommuelleriana</i>
Hemlock	
Eastern	<i>Tsuga canadensis</i>
Western	<i>Tsuga heterophylla</i>

Common Name	Scientific Name
Juniper	
Blue Star	<i>Juniperus scopularum</i>
Creeping	<i>Juniperus horizontalis</i>
Japanese Garden	<i>Juniperus chinensis</i>
Tamarix	<i>Juniperus Sabina</i>
Pine	
Austrian	<i>Pinus nigra</i>
Eastern White	<i>Pinus strobus</i>
Jack	<i>Pinus banksiana</i>
Japanese Black	<i>Pinus thunbergiana</i>
Loblolly	<i>Pinus taeda</i>
Lodgepole	<i>Pinus contorta</i>
Longleaf	<i>Pinus palustris</i>
Mugo	<i>Pinus mugo</i>
Ponderosa	<i>Pinus ponderosa</i>
Sand	<i>Pinus clausa</i>
Scotch	<i>Pinus sylvestris</i>
Shortleaf	<i>Pinus echinata</i>
Slash	<i>Pinus elliotii</i>
Virginia	<i>Pinus virginiana</i>
Spruce	
Blue	<i>Picea pungens</i>
Dwarf Alberta	<i>Picea glauca conica</i>
Norway	<i>Picea abies</i>
Sitka	<i>Picea sitchensis</i>
Yew	
English	<i>Taxus baccata</i>
Japanese	<i>Taxus cuspidata</i>

### DIRECTIONS FOR USE IN CONTAINER AND FIELD GROWN DECIDUOUS TREES AND NON-BEARING FRUIT AND NON-BEARING NUT TREES

Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide only when applied to the soil and base of plants. Application of Alligare FLUMIGARD

Herbicide to deciduous foliage or green bark may result in unacceptable injury.

Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide 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 oz (0.25 to 0.38 lb ai/A) of Alligare FLUMIGARD Herbicide per broadcast acre as a preemergence (to weed emergence) application. Apply Alligare FLUMIGARD Herbicide 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. Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide will disturb soil surfaces, which may reduce herbicidal efficacy. The use of spray shields that limit exposure of foliage and bark to Alligare FLUMIGARD Herbicide is suggested. When applied before weed germination, Alligare FLUMIGARD Herbicide will control broadleaf and grassy weeds listed in Table 1.

#### POSTEMERGENCE APPLICATION

Apply 8 to 12 oz (0.25 to 0.38 lb ai/A) of Alligare FLUMIGARD Herbicide per broadcast acre plus an adjuvant (0.25% v/v non-ionic surfactant or 1 qt/A crop oil concentrate). Make

postemergence (to weed emergence) applications of Alligare FLUMIGARD Herbicide when weeds are actively growing and are no larger than 2 inches in height. The addition of a surfactant enhances Alligare FLUMIGARD Herbicide activity on emerged weeds. Thorough spray coverage is necessary to maximize the postemergence activity of Alligare FLUMIGARD Herbicide. When applied after weed germination, Alligare FLUMIGARD Herbicide will provide preemergence and postemergence control of broadleaf weeds and grasses listed in Table 1. If plant injury is a concern, use a spray shield to limit the exposure of trees to Alligare FLUMIGARD Herbicide.

Postemergence control of Alligare FLUMIGARD Herbicide 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.

#### **TANK MIXTURES FOR FIELD AND CONTAINER GROWN DECIDUOUS TREES**

Tank mixing Alligare FLUMIGARD Herbicide with other preemergence and postemergence herbicides registered for use on deciduous trees may provide a broader spectrum of weed control than Alligare FLUMIGARD Herbicide alone. Alligare FLUMIGARD Herbicide may also be applied as part of a postemergence burndown program of control of annual and perennial weeds. Tank mixing Alligare FLUMIGARD Herbicide with glyphosate will increase the speed of burn-down compared to glyphosate applied alone. Alligare FLUMIGARD Herbicide may be tank mixed with products containing the following active ingredient labeled for use in deciduous trees:

- clethodim
- glyphosate\*
- oryzalin
- pendimethalin
- prodiamine
- simazine\*

\*Do not apply glyphosate or simazine to containerized plants.

**IMPORTANT:** Completely read and follow the label of any

herbicides mixed with Alligare FLUMIGARD Herbicide. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

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

Alligare FLUMIGARD Herbicide may be applied as a directed spray to the deciduous, non-bearing fruit and non-bearing nut tree species listed in Table 3. If a desired tree species is not listed in Table 3, evaluate the safety of Alligare FLUMIGARD Herbicide on a small number of plants under commercial growing conditions and monitor plant response for four to six weeks for phytotoxicity. Testing Alligare FLUMIGARD Herbicide on a small number of plants will determine if Alligare FLUMIGARD Herbicide can be used safely on a widespread basis.

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A (0.38 lb ai/A) or 3 applications at 8 oz/A (0.25 lb ai/A) per year.
- Do not re-apply Alligare FLUMIGARD Herbicide within 30 days.



**TABLE 3. TOLERANT DECIDUOUS TREE SPECIES**

Common Name	Scientific Name
Apricot*	<i>Prunus</i> spp.
Ash	<i>Fraxinus</i> spp.
Birch	<i>Betula</i> spp.
Buckeye	<i>Aesculus</i> spp.
Cherry*	<i>Prunus</i> spp.
Chestnut	<i>Castanea</i> spp.
Citrus*	<i>Citrus</i> spp.
Dogwood	<i>Cornus</i> spp.
Eucalyptus	<i>Eucalyptus</i> spp.
Ginkgo	<i>Ginkgo</i> spp.
Hawthorn	<i>Crataegus</i> spp.
Honeylocust	<i>Gleditsia</i> spp.
Larch	<i>Larix</i> spp.
Lilac	<i>Syringa</i> spp.
Maple**	<i>Acer</i> spp.
Mrytle, Crepe	<i>Lagerstroemia indica</i>
Oak	<i>Quercus</i> spp.
Poplar	<i>Populus</i> spp.
Peach*	<i>Prunus</i> spp.
Plum*	<i>Prunus</i> spp.
Pecan*	<i>Carya</i> spp.
Redbud	<i>Cercis canadensis</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Sycamore	<i>Platanus</i> spp.
Walnut, Black	<i>Juglans nigra</i>
Willow	<i>Salix</i> spp.

\*Non-bearing trees only.

\*\*Not for use on maple trees used for production of maple sap or syrup.

**DIRECTIONS FOR USE AROUND ESTABLISHED WOODY LANDSCAPE ORNAMENTALS AND TO MAINTAIN BARE GROUND NON-CROP AREAS**

In residential and commercial landscapes, Alligare FLUMIGARD Herbicide can only be applied by commercial licensed applicators. Application of Alligare FLUMIGARD

Herbicide 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 2 and 3. Alligare FLUMIGARD Herbicide may also be applied to maintain bare ground in non-crop areas in apartment complexes, fence rows, gravel surfaces, ground mats, golf courses, office complexes, parks, recreational sites, schools, sidewalks, and other similar sites. Do not apply Alligare FLUMIGARD Herbicide within any enclosed structure in residential or commercial landscapes.

Alligare FLUMIGARD Herbicide 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. 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 Alligare FLUMIGARD Herbicide spray or spray drift 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 Alligare FLUMIGARD Herbicide over the top of ornamental plants growing in the landscape, and do not allow Alligare FLUMIGARD Herbicide spray to contact, drift or splash from soil onto the foliage, green stems, exposed roots or fruit of desirable plants. Avoid application of Alligare FLUMIGARD Herbicide under conditions that favor drift of sprays onto desired ornamentals or turfgrass. Spray shields must be used to limit the plant exposure to Alligare FLUMIGARD Herbicide when applying near desirable plants.**

**Do not apply Alligare FLUMIGARD Herbicide 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 planted into treated areas.**

### **PREEMERGENCE APPLICATION (NO WEEDS ARE PRESENT)**

Mix 1 ¼ to 2 ½ tsp of Alligare FLUMIGARD Herbicide per gal (10 oz/A) of spray solution, and apply 1 gal of spray solution to 500 – 1,000 sq ft (10 oz/A) prior to weed germination (see calibration table for backpack sprayers). Apply Alligare FLUMIGARD Herbicide to weed free soil, mulch or gravel surfaces. Moisture is necessary to activate Alligare FLUMIGARD Herbicide on soil for residual weed control. When applied before weed germination, Alligare FLUMIGARD Herbicide will control the broadleaf weeds and grasses listed in Table 1.

Established landscape ornamentals have shown tolerance to Alligare FLUMIGARD Herbicide **only** when applied to the soil at the base of the plant. For maximum plant safety when using around desirable ornamentals, direct applications of Alligare FLUMIGARD Herbicide 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 1 ¼ to 2 ½ tsp of Alligare FLUMIGARD Herbicide per gal (10 oz/A) and apply 1 gal of spray solution to 500 – 1,000 sq ft to actively growing weeds (see calibration chart for backpack sprayers). Tank mixing Alligare FLUMIGARD Herbicide with glyphosate will increase the spectrum of postemergence weed control over Alligare FLUMIGARD Herbicide alone, provide faster postemergence weed control than glyphosate alone, and provide pre- and postemergence control of the broadleaf weeds and grasses listed in Table 1.

Established landscape ornamentals have shown tolerance to applications of Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide plus glyphosate towards the soil, and leave a sufficient non-treated buffer to ensure the spray solution does not contact desired plants.

Thorough spray coverage of weeds is necessary to maximize weed control. Apply uniformly, but do not spray to the point of runoff.

Do not harvest fruit or nuts from treated trees within one year of application.

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

### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 10 oz/A (0.32 lb ai/A) per year.
- Do not re-apply Alligare FLUMIGARD Herbicide within 30 days.

### **DIRECTIONS FOR USE TO MAINTAIN BARE GROUND NON-CROP AREAS IN AND AROUND ORNAMENTAL NURSERIES**

Alligare FLUMIGARD Herbicide, 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 Alligare FLUMIGARD Herbicide only to:

- Bare ground areas around buildings and other structures. Do not apply within any enclosed structure.
- Bare ground along fence rows.
- Gravel surfaces and driveways.
- Ground matting and gravel pads prior to the addition of containerized plants (conifers, deciduous trees and ornamentals).

**IMPORTANT:** Follow all applicable directions as outlined above under Product Information. See Table 1 for a list of grasses and broadleaf weeds controlled by Alligare FLUMIGARD Herbicide.

Alligare FLUMIGARD Herbicide offers residual and post-emergence control of susceptible grasses and broadleaf weeds as well as additional mode of action to assist in the

control of 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 oz (0.25 to 0.38 lb ai/A) of Alligare FLUMIGARD Herbicide per broadcast acre as a preemergence application. Preemergence applications of Alligare FLUMIGARD Herbicide must be completed prior to weed emergence. Moisture is necessary to activate Alligare FLUMIGARD Herbicide for residual weed control. Dry weather following application of Alligare FLUMIGARD Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Alligare FLUMIGARD Herbicide will control susceptible germinating weeds.

#### **POSTEMERGENCE APPLICATION**

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

#### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A (0.38 lb ai/A) or 3 applications at 8 oz/A (0.25 lb ai/A) per year.
- Do not re-apply Alligare FLUMIGARD Herbicide within 30 days.

### **DIRECTIONS FOR USE IN CONIFER RE-FORESTATION SITES FOLLOWING TIMBER HARVEST (Not for use in California)**

Alligare FLUMIGARD Herbicide is a preemergence and postemergence herbicide for control of selected grass and broadleaf weeds in conifer re-forestation sites following timber harvest operations. Alligare FLUMIGARD Herbicide may be used as a site preparation treatment prior to transplanting of conifers or as a conifer release treatment after stand establishment.

Apply Alligare FLUMIGARD Herbicide in at least 10 gals of water per acre to achieve uniform spray coverage using ground or aerial spray equipment.

#### **Site Preparation – Application Before Transplanting**

Apply 8 to 12 oz of Alligare FLUMIGARD Herbicide (0.25 to 0.38 lb ai) per acre. Transplant operations must take place at least 2 months after application. To obtain optimal weed control, apply Alligare FLUMIGARD Herbicide before weed emergence or after a burndown herbicide has controlled existing vegetation. If existing weed canopy is less than 40%, Alligare FLUMIGARD Herbicide may be tank mixed with a burndown herbicide to provide preemergence weed control.

#### **Conifer Release Treatments – Applications only within 3 years after transplanting.**

Apply 8 to 12 oz of Alligare FLUMIGARD Herbicide (0.25 to 0.38 lb ai) per acre over the top of trees prior to budbreak in the spring or after dormancy in fall. Do not apply Alligare FLUMIGARD Herbicide over the top of trees after budbreak or needle spotting and defoliation may occur. Alligare FLUMIGARD Herbicide will not affect new growth of trees. See Table 4 for a list of tolerant conifers for over the top treatments. Do not apply Alligare FLUMIGARD Herbicide over the top unless trees are more than two years past seedling, also known as 1+1 stock.

**TANK MIXING – Conifer Release Treatments**

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

It is the pesticide user’s responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**ADJUVANTS – Conifer Release Treatments**

When using as a Conifer Release Treatment, do not mix Alligare FLUMIGARD Herbicide with any adjuvant or fertilizer.

**IMPORTANT:** When applied as directed, the conifers listed in Table 4 have shown tolerance to Alligare FLUMIGARD Herbicide. However, Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide on a small number of plants under commercial growing conditions, and monitor plant response for four to six weeks for phytotoxicity. Test Alligare FLUMIGARD Herbicide on a small number of plants to determine if Alligare FLUMIGARD Herbicide can be used safely on a widespread basis. 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 Alligare FLUMIGARD Herbicide.

**RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A (0.38 lb ai/A) or 3 applications at 8 oz/A (0.25 lb ai/A) per year.

- Do not re-apply Alligare FLUMIGARD Herbicide within 30 days.

**TABLE 4: TOLERANT CONIFER TREE SPECIES:**

Common Name	Scientific Name
Fir	
Concolor	<i>Abies concolor</i>
Cork Bark	<i>Abies lasiocarpa</i>
Douglas	<i>Pseudotsuga menziesii</i>
Fraser	<i>Abies fraseri</i>
Grand	<i>Abies grandis</i>
Noble	<i>Abies procera</i>
Turkish	<i>Abies bommuelleriana</i>
Hemlock	
Eastern	<i>Tsuga canadensis</i>
Western	<i>Tsuga heterophylla</i>
Pine	
Austrian	<i>Pinus nigra</i>
Eastern White	<i>Pinus strobus</i>
Jack	<i>Pinus banksiana</i>
Japanese Black	<i>Pinus thunbergiana</i>
Loblolly	<i>Pinus taeda</i>
Lodgepole	<i>Pinus contorta</i>
Longleaf	<i>Pinus palustris</i>
Mugo	<i>Pinus mugo</i>
Ponderosa	<i>Pinus ponderosa</i>
Sand	<i>Pinus clausa</i>
Scotch	<i>Pinus sylvestris</i>
Shortleaf	<i>Pinus echinata</i>
Slash	<i>Pinus elliotii</i>
Virginia	<i>Pinus virginiana</i>
Spruce	
Blue	<i>Picea pungens</i>
Dwarf Alberta	<i>Picea glauca conica</i>
Norway	<i>Picea abies</i>
Sitka	<i>Picea sitchensis</i>

## **DIRECTIONS FOR USE IN POPLAR PLANTATIONS AND TIMBER RE-FORESTATION SITES (Not for use in California)**

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

Apply Alligare FLUMIGARD Herbicide in at least 10 gals of water per acre to achieve uniform spray coverage using ground or aerial spray equipment.

### **Site Preparation-Application Before Transplanting**

Apply 8 to 12 oz of Alligare FLUMIGARD Herbicide (0.25 to 0.38 lb ai) per acre. Transplant operations must take place at least 3 months after application. To obtain optimal weed control, apply Alligare FLUMIGARD Herbicide before weed emergence or after a burndown herbicide has controlled existing vegetation. If existing weed canopy is less than 40%, Alligare FLUMIGARD Herbicide may be tank mixed with a burndown herbicide to provide preemergence weed control.

### **Release Treatments – Applications Within 3 Years After Transplanting**

Apply 8 to 12 oz of Alligare FLUMIGARD Herbicide (0.25 to 0.38 lb ai) per acre over the top of trees prior to budbreak in the spring or after dormancy in fall. Do not apply Alligare FLUMIGARD Herbicide over the top of trees after budbreak or leaf spotting and defoliation may occur. Alligare FLUMIGARD Herbicide will not affect new growth of trees of tolerant poplars for over the top treatments. Do not apply Alligare FLUMIGARD Herbicide over the top unless trees are more than one year old.

### **TANK MIXING – Poplar Release Treatments**

Certain liquid formulations of other pesticides may increase the postemergence activity of Alligare FLUMIGARD

Herbicide, but may also increase the potential for injury when applied over the top of various plants. Therefore, tank mixtures of these materials with Alligare FLUMIGARD Herbicide may be more injurious than Alligare FLUMIGARD Herbicide applied alone and need to be tested to determine if they can be used safely on a widespread basis.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

### **ADJUVANTS – Poplar Release Treatments**

When applying Release Treatments, do not mix Alligare FLUMIGARD Herbicide with any adjuvant or fertilizer.

**IMPORTANT:** When applied as directed, poplars (*Populus balsamifera*, *P. grandidentata*, *P. niger* and *P. tremuloides*), hybrid poplars (*P. sp. x sp.*), and cottonwoods (*P. deltoides* and *P. trichocarpa*) have shown tolerance to Alligare FLUMIGARD Herbicide. However, Alligare FLUMIGARD Herbicide is a very active herbicide. Exercise responsible judgment and caution until familiarity is gained with this product. Test Alligare FLUMIGARD Herbicide on a small number of plants to determine if Alligare FLUMIGARD Herbicide can be used safely on a widespread basis.

### **RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A (0.38 lb ai/A) or 3 applications at 8 oz/A (0.25 lb ai/A) per year.
- Do not re-apply Alligare FLUMIGARD Herbicide within 30 days.

## **DIRECTIONS FOR USE ON DORMANT WARM-SEASON TURFGRASS GROWN ON RESIDENTIAL SITES, GOLF COURSES, SOD PRODUCTION AND SIMILAR AREAS**

Alligare FLUMIGARD Herbicide may be applied as a single or split application to well established dormant turfgrass listed in Table 5. Alligare FLUMIGARD Herbicide will provide preemergence and early postemergence control of annual bluegrass, chickweed, henbit and other winter annual weeds found in Table 1. Alligare FLUMIGARD Herbicide will provide preemergence control of crabgrass, goosegrass and other summer annual weeds found in Table 1. Alligare FLUMIGARD Herbicide 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 and other similar sites. Bermudagrass exhibits tolerance to Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide to actively growing turfgrass (warm season and cool season) or during green-up may cause unacceptable injury.

### **BROADCAST APPLICATIONS**

Apply 8 to 12 oz of Alligare FLUMIGARD Herbicide (0.25 to 0.38 lb ai) per broadcast acre as a preemergence (to weed emergence) application. If weeds are present at the time of application apply Alligare FLUMIGARD Herbicide plus an adjuvant (0.25% v/v non-ionic surfactant). Make postemergence (to weed emergence) applications of Alligare FLUMIGARD Herbicide when weeds are actively growing and no larger than 2 inches in height. Thorough spray coverage is necessary to maximize the postemergence activity of Alligare FLUMIGARD Herbicide. When applied after weed germination, Alligare FLUMIGARD Herbicide will provide preemergence and postemergence control of broadleaf weeds and grasses listed in Table 1. Postemergence control of Alligare FLUMIGARD Herbicide 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.

Alligare FLUMIGARD Herbicide 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 under cold conditions when weeds are not actively growing. A second application of Alligare FLUMIGARD Herbicide may be required to provide adequate season-long annual bluegrass control. Alligare FLUMIGARD Herbicide will provide best control of crabgrass, goosegrass and other summer annual weeds when applied in the late winter before turfgrass resumes active growth.

### **SPOT TREATMENTS**

Mix 2 ½ tsp per gal of Alligare FLUMIGARD Herbicide and 2 tsp (1/3 fl oz) of non-ionic surfactant in one gal of water and apply one gal of spray solution per 1,000 sq ft. Occasionally shake the spray solution while spraying to ensure the spray solution remains well mixed. Spray the target weeds until the leaves are wet.

### **TANK MIXING WITH OTHER TURFGRASS HERBICIDES**

Alligare FLUMIGARD Herbicide will suppress, but will not effectively control established winter perennial weeds including dandelion and clover. Alligare FLUMIGARD Herbicide may be tank mixed with metsulfuron to control winter perennial weeds.

**IMPORTANT:** If applied in the fall to semi-dormant turfgrass, Alligare FLUMIGARD Herbicide may accelerate dormancy. If applied in the spring after turfgrass resumes active growth, Alligare FLUMIGARD Herbicide will cause temporary discoloration of turf and delay greenup.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

### **USE PRECAUTIONS**

Use around Bentgrass and Poa Greens: Alligare FLUMIGARD Herbicide has limited potential for lateral movement on level terrain, but can potentially move down

slope after excessive rainfall and effect 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 Alligare FLUMIGARD Herbicide is applied to soil at less than field capacity. Avoid application when heavy rain is imminent or when the soil is saturated.

**RESTRICTIONS AND LIMITATIONS**

- Do not apply more than 2 applications at 12 oz/A (0.38 lb ai/A) or 3 applications at 8 oz/A (0.25 lb ai/A) per year.
- 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 Alligare FLUMIGARD Herbicide 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.
- Allow 8 weeks between application and seeding or sodding of turfgrass.

**TABLE 5. TOLERANT TURFGRASS SPECIES**

COMMON NAME	SCIENTIFIC NAME
Bermudagrass	<i>Cynodon</i> spp.
Centipedegrass	<i>Eremochloa ophiuroides</i>
Seashore Paspalum	<i>Paspalum vaginatum</i>
St. Augustinegrass	<i>Stenotaphrum secundatum</i>
Zoysiagrass	<i>Zoysia</i> spp.

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

**APPLICATOR & SPRAYER INFORMATION**

**Mixing Instructions**

- Fill clean spray tank ½ full of desired level with water and add buffering agent if necessary.
- Add the required amount of Alligare FLUMIGARD Herbicide to the spray tank while agitating.
- Fill spray tank to desired level with water. Ensure that Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide within 12 hours of mixing.

**ADDITIVES**

When applying Alligare FLUMIGARD Herbicide to the foliage of floating or emerged aquatic weeds, mix with an adjuvant approved for use in aquatic sites. Mix Alligare FLUMIGARD Herbicide with a non-ionic surfactant containing at least 80% active ingredient. It is the pesticide user’s responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. Verify mixing compatibility by a jar test before using.

**Jar Test to Determine Compatibility of Adjuvants and Alligare FLUMIGARD Herbicide**

Conduct a jar test before mixing commercial quantities of Alligare FLUMIGARD Herbicide, when using for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pt of water to a quart jar. Use water from the same source and the same temperature as the water

used in the spray tank mixing operation.

2. Add 3 grams (approximately 1 level tsp) of Alligare FLUMIGARD Herbicide for the 8 oz/A rate or 4 grams (approximately 1-1/2 tsp) for 12 oz/A rate to the jar. Gently mix until product disperses.
3. Add 60 ml (4 Tbsp or 2 fl oz) of additive to the quart jar and 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 and free of suspended particles. If any of the following conditions are observed, question the choice of adjuvant:
  - a) Layer of oil or globules on the solution 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, follow the following steps 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 Alligare FLUMIGARD Herbicide. 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 Alligare FLUMIGARD Herbicide must provide uniform coverage of surface weeds and sufficient contact time. When applied by air, Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and avoid drift, the following direction must be observed:

##### **- Volume Pressure**

Apply Alligare FLUMIGARD Herbicide in a minimum of 10 gals of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gals 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 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 directions.

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

Alligare FLUMIGARD Herbicide will control weeds and algae listed in Table 6, *Floating and Emerged Weeds*, when applied as a broadcast spray with appropriate equipment. For best results, apply Alligare FLUMIGARD Herbicide to the foliage of actively growing weeds.



**TABLE 6. FLOATING AND EMERGED WEEDS**

Common Name	Scientific Name
Alligator Weed	<i>Alternanthera philoxeroides</i>
Duckweed	<i>Lemna</i> spp.
Frog's-bit	<i>Limnobium spongia</i>
Water Fern	<i>Salvinia</i> spp.
Water Lettuce	<i>Pistia stratiotes</i>
Watermeal	<i>Wolffia</i> spp.
Water Pennywort	<i>Hydrocotyle</i> spp.
Filamentous algae	<i>Pithophora</i>
Filamentous algae	<i>Cladophora</i>

**Surface Application**

Apply Alligare FLUMIGARD Herbicide as a broadcast spray at 6 to 12 ounces of formulated product (0.19 to 0.38 lb ai) per acre plus an adjuvant approved for use in aquatics.

Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide in a minimum of 30 gals 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, apply once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

Application of Alligare FLUMIGARD Herbicide 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.

Alligare FLUMIGARD Herbicide 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. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**Application Equipment**

Apply Alligare FLUMIGARD Herbicide 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 APPLICATION**

Alligare FLUMIGARD Herbicide will control submersed and floating weeds listed in Table 7, *Submersed and Floating Weeds Controlled by Subsurface Application*, when applied subsurface with appropriate equipment.

**TABLE 7. SUBMERSED AND FLOATING WEEDS CONTROLLED BY SUBSURFACE APPLICATION**

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

### Subsurface Application

Apply Alligare FLUMIGARD Herbicide at a rate that will produce an initial concentration of 200 to 400 ppb (of active ingredient flumioxazin) in the water column.

Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide under these conditions may provide only partial weed control, and regrowth is likely. For best control, apply Alligare FLUMIGARD Herbicide in a minimum of 30 gals 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 Alligare FLUMIGARD Herbicide is required for optimal performance. Application of Alligare FLUMIGARD Herbicide 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 8, *Subsurface Application Rates* to determine the amount of Alligare FLUMIGARD Herbicide 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 been previously controlled. If a second application is required to provide control, make the treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

When applying Alligare FLUMIGARD Herbicide 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.

Alligare FLUMIGARD Herbicide may be tank mixed with other registered submersed applied herbicides for enhanced control of submersed and floating weeds. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restric-

tions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

### Application Equipment

To improve distribution in the water column and ensure adequate coverage apply Alligare FLUMIGARD Herbicide 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.

### Information on Hydrilla Control in Florida

Apply Alligare FLUMIGARD Herbicide 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 Alligare FLUMIGARD Herbicide 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, Alligare FLUMIGARD Herbicide will cause some discoloration and loss of growing tips, but regrowth will be rapid.

Tank mixing Alligare FLUMIGARD Herbicide with other registered herbicides is suggested, especially if hydrilla is approaching maturity or biomass is heavy.

**TABLE 8. SUBSURFACE APPLICATION RATES**

Water Depth (feet)	Pounds of Alligare FLUMIGARD Herbicide 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
6	6.4	9.5	12.7
7	7.4	11.1	14.8

Example: to achieve an initial concentration of 200 ppb of flumioxazin in a 4 foot deep water column, apply 4.2 lbs of Alligare FLUMIGARD Herbicide per surface acre.

## **STORAGE AND DISPOSAL**

**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 store or transport near feed or food. Not for use or storage in or around the home. Do not contaminate water, food or feed by storage, disposal or cleaning equipment.

**PESTICIDE DISPOSAL:** Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### **CONTAINER HANDLING:**

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

## **CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

To the extent consistent with applicable law, upon purchase or use of this product, purchaser and user agree to the following terms:

**Warranty:** Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. To the extent consistent with applicable law, the Company makes no other representation or warranty, express or implied, concerning the product, including no implied war-

ranty of merchantability or fitness for a particular purpose. To the extent consistent with applicable law, no such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

**Terms of Sale:** The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

**Limitation of Liability:** To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

FLUMIGARD™ is a trademark of ADAMA group company.

EPA 20180928

 **ALLIGARE**

# FLUMIGARD™

## Herbicide

FOR USE IN CONTAINER AND FIELD GROWN CONIFERS (INCLUDING CHRISTMAS TREES) AND DECIDUOUS TREES, AROUND ESTABLISHED WOODY ORNAMENTALS IN LANDSCAPES, TO MAINTAIN BARE GROUND NON-CROP AREAS, CONIFER AND POPLAR RE-FORESTATION SITES\*, AND DORMANT TURFGRASS, FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS (TO CONTROL FLOATING AND EMERGED WEEDS USING SURFACE AND SUBSURFACE APPLICATIONS)

\*Not approved for use in conifer and poplar re-forestation sites in California.

<b>ACTIVE INGREDIENT:</b>	<b>By Wt</b>
Flumioxazin*	51.0%
<b>OTHER INGREDIENTS:</b>	49.0%
<b>TOTAL:</b>	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)	

Alligare FLUMIGARD™ Herbicide is a water dispersible granule containing 51% active ingredient.

EPA Reg. No. 81927-68      EPA Est. No. 81927-AL-001<sup>PM</sup>; 37429-GA-001<sup>BT</sup>  
Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

## KEEP OUT OF REACH OF CHILDREN

# CAUTION

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing dust and spray mist. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

**Manufactured for:** Alligare, LLC  
13 N. 8th Street • Opelika, AL 36801

**Net Weight: 5 lbs.**

FLUMIOXAZIN GROUP 14 HERBICIDE

### FIRST AID

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**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 1-800-424-9300 for emergency medical treatment information.

## STORAGE AND DISPOSAL

**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 store or transport near feed or food. Not for use or storage in or around the home. Do not contaminate water, food or feed by storage, disposal or cleaning equipment.

**PESTICIDE DISPOSAL:** Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### CONTAINER HANDLING:

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

See inside label booklet for additional Precautionary Statements and Directions for Use.

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PEEL BACK BOOK HERE