



**OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION**

WASHINGTON, D.C. 20460

February 29, 2024

Michael Kellogg  
Agent  
Alligare, LLC  
c/o Pyxis Regulatory Consulting Inc.  
4110 136th St. Ct. NW  
Gig Harbor, WA 98332

Subject: Notification per PRN 98-10 – Adding language that relates to testing the pH of the water to be mixed with the product and an Alternate Brand Name  
Product Name: Flumi-Imazapic  
EPA Registration Number: 81927-84  
Application Date: 05/04/2022 & 11/29/2023  
Case Number: 00481341 & 00491958

Dear Michael Kellogg:

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

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

The alternate brand name, “**MAINLINE Herbicide**” has been added to the product record.

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

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EPA Reg. No. 81927-84

Case No. 00481341 & 00491958

If you have any questions, please contact Francisco Llarena-Arias at 202-566-2816 or at [llarena-arias.francisco@epa.gov](mailto:llarena-arias.francisco@epa.gov).

A handwritten signature in black ink, appearing to read "Francisco Llarena-Arias", is centered on the page. The signature is fluid and cursive, with a large initial "F" and "L".

Francisco Llarena-Arias  
For Lydia Crawford,  
Acting Product Manager 24  
Fungicide & Herbicide Branch  
Registration Division (7505P)

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

02/29/2024

[Note to reviewer: [Text] in brackets denotes optional text].

[Note to reviewer: {Text} in braces denotes where in the final label text will appear].

{[BOOKLET FRONT PANEL LANGUAGE]}

FLUMIOXAZIN	GROUP	14	HERBICIDE
IMAZAPIC	GROUP	2	HERBICIDE

## Flumi-Imazapic

[Alternate Brand Name: Promenade PRIME, MAINLINE Herbicide]

FOR WEED CONTROL ON NON-CROP SITES INCLUDING RIGHTS-OF-WAY, ROADSIDES, HIGHWAY MEDIANS, RAILROAD CROSSINGS, INDUSTRIAL AND UTILITY PLANT SITES, UTILITY SUBSTATIONS, PETROLEUM TANK FARMS, PUMPING INSTALLATIONS, NON-AGRICULTURAL FENCE ROWS, STORAGE AREAS, NON-IRRIGATION DITCH BANKS, AND AIRPORTS.

ACTIVE INGREDIENTS:	% BY WT.
Ammonium salt of imazapic (+/- -2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1 H imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid*) .....	11.67%
Flumioxazin .....	22.06%
<b>OTHER INGREDIENTS:</b> .....	<u>66.27%</u>
<b>TOTAL:</b> .....	100.00%

This product contains:

1.0 lb. of imazapic acid equivalent per gallon or 11.0%

2.0 lbs. of flumioxazin per gallon

### KEEP OUT OF REACH OF CHILDREN

## CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

[See] [inside] [label] [booklet] [for] [First Aid][,] [additional] [Precautionary Statements][,] [and] [Directions for Use] [including] [Storage and Disposal] [instructions][.]

[For ≤ 5 Gallon Containers:] [Shake Well Before Use]

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

EPA Reg. No. 81927-84

EPA Est. No.

**Manufactured for:**

Alligare, LLC  
1565 5th Avenue  
Opelika, AL 36801

**Net Contents:**

## {[LANGUAGE INSIDE BOOKLET]}

FIRST AID	
<b>IF IN EYES:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR MEDICAL EMERGENCIES INVOLVING THIS PRODUCT, CALL NATIONAL POISON CONTROL AT 1-800-222-1222 OR CHEMTREC® TOLL FREE 1-800-424-9300 or 1-703-527-3887 24 hours per day, 7 days per week.	

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### CAUTION

Avoid breathing spray mist. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

##### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes and socks

#### USER SAFETY REQUIREMENTS

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

#### USER SAFETY RECOMMENDATIONS

##### Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### ENVIRONMENTAL HAZARDS

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

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

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

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

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

**GROUNDWATER ADVISORY STATEMENT:** This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

**SURFACE WATER ADVISORY STATEMENT:** This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water.

This product is classified as having high potential for reaching surface water via runoff for several months or more after application.

A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features including ponds, streams, and springs will reduce the potential loading of this product from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

#### **PHYSICAL OR CHEMICAL HAZARDS**

**DO NOT** mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

### **DIRECTIONS FOR USE**

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

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

**DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### **NON-AGRICULTURAL USE REQUIREMENTS**

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

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

**DO NOT** enter or allow others to enter the treated area until sprays have dried.

#### **RISKS OF USING THIS PRODUCT**

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

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

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

See also **CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY** sections of the label for additional information.

### TANK MIXES

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

Alligare **Flumi-Imazapic** can be mixed with other herbicides for additional control in noncrop areas including those listed in Table 1 below as well as other appropriately labeled products.

To create bare ground areas where established perennial grasses are present, tank mix with an appropriately labeled glyphosate product.

**Table 1. Tank Mix Partners**

Brand Name	EPA Reg. No.	Brand Name	EPA Reg. No.
Glyphosate 4 Plus (Glyphosate-isopropylammonium)	81927-9	Triclopyr 3SL (Triclopyr, triethylamine salt)	81927-13
Imazapyr 4 SL (Imazapyr, isopropylamine salt)	81927-24	MSM 60 DF (Metsulfuron)	81927-7
Mojave 70 EG (Diuron + Imazapyr)	81927-25	Triumph 22K (Picloram-potassium)	81927-18
Diuron 80 DF (Diuron)	81927-12	Whetstone (Aminopyralid-tripromine)	81927-82

To test for the compatibility of any other herbicides not listed in Table 1 with Alligare **Flumi-Imazapic**, use a jar test. Mixing Alligare **Flumi-Imazapic** with 2,4-D or other phenoxy-type herbicides could lead to reduced control of perennial grass weeds.

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

### PRODUCT INFORMATION

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

This product controls weeds with two modes of action. Flumioxazin works by inhibiting protoporphyrinogen oxidase (PPO), an essential enzyme required by plants for chlorophyll biosynthesis. Imazapic works by inhibiting acetolactate synthase (ALS), a key enzyme in the biosynthesis of branched-chain amino acids.

**Flumi-Imazapic** can be applied preemergence or postemergence to control annual and perennial

grasses, broadleaf weeds and vine species and provide control of labeled weeds which germinate in the treated area. Direct application of **Flumi-Imazapic** to the foliage of certain desirable brush species and ornamentals could lead to injury.

**Flumi-Imazapic can be applied to non-crop use sites including:**

- rights-of-way (railroad, utility, pipeline and highway)
- roadsides
- highway medians
- railroad crossings
- industrial plant sites
- utility plant sites
- utility substations
- petroleum tank farms
- pumping installations
- non-agricultural fence rows
- storage areas
- non-irrigation ditch banks
- airports

**USE RESTRICTIONS**

- **DO NOT** apply more than 24 fl oz (0.38 lb. ai flumioxazin / 0.19 lb. ae imazapic) of this product per acre per application.
- **DO NOT** apply more than 24 fl oz (0.38 lb. ai flumioxazin / 0.19 lb. ae imazapic) of this product per acre per year.
- **DO NOT** make more than one application per year.
- **DO NOT** irrigate within 1 hour before or after application.
- **DO NOT** apply if rain is expected within 1 hour after application.
- **DO NOT** apply when weather conditions favor spray drift from treated areas.
- **DO NOT** incorporate into soil after application.
- **DO NOT** apply this product through any type of irrigation system.
- **DO NOT** apply to moist or wet desirable plant foliage.
- **DO NOT** apply within 300 feet of non-dormant pome or stone fruit crops.
- **DO NOT** apply this product when the weeds are under stress due to drought, excessive water and extremes in temperature or disease.
- **DO NOT** use this product on food or feed crops.

**USE PRECAUTIONS**

- Treatment of powdery, dry 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.
- Desirable trees and ornamental plants can be injured if rinsate from spray equipment used to apply this product is allowed to wash or move into contact with plant roots.

**WEED RESISTANCE MANAGEMENT**

For resistance management, please note that **Flumi-Imazapic** contains both a Group 14/Flumioxazin and a Group 2/Imazapic herbicide. Any weed population may contain plants naturally resistant to Group 14 and/or Group 2 herbicides. The resistant individuals may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies must be followed.

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

- Avoid the consecutive use of **Flumi-Imazapic** or other target site of action Group 14/Group 2 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 use sites prior to application to identify the weed species present and their growth state to determine if the intended application will be effective.
- Scout use sites 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 directions for specific crops and resistant weed biotypes.

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

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

#### **MANDATORY SPRAY DRIFT DIRECTIONS**

##### Aerial Applications

- **DO NOT** release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators must select nozzle and pressure that deliver Coarse or coarser droplets in accordance with American Society of Agricultural & Biological Engineers Standard 572.1 (ASABE S572.1).
- If the windspeed is 10 miles per hour or less, applicators must use ½ swath displacement upwind at the downwind edge of the application site. When the windspeed is between 11-15 miles per hour, applicators must use ¾ swath displacement upwind at the downwind edge of the application site.
- **DO NOT** apply when wind speeds exceed 15 mph at the application site. If the windspeed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- **DO NOT** apply during temperature inversions.

##### Ground Boom Applications

- User must only apply with the release height recommended by the manufacturer, but no more than 3 feet above the ground or vegetative canopy.
- Applicators must select nozzle and pressure that deliver Coarse or coarser droplets in accordance with American Society of Agricultural & Biological Engineers Standard 572.1 (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 15 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

##### Boom-less Ground Applications:

- Applicators must select nozzle and pressure that deliver Coarse or coarser droplets in accordance with American Society of Agricultural & Biological Engineers Standard 572.1 (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 15 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.



## **Spray Drift Advisories**

- THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.
- BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.
- IMPORTANCE OF DROPLET SIZE  
An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.  
Controlling Droplet Size - Ground Boom
  - Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
  - Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
  - Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.
- Controlling Droplet Size - Aircraft
  - Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.
- BOOM HEIGHT - Ground Boom  
For ground equipment, the boom should remain level with the target area and have minimal bounce.
- RELEASE HEIGHT - Aircraft  
Higher release heights increase the potential for spray drift.
- SHIELDED SPRAYERS  
Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.
- TEMPERATURE AND HUMIDITY  
When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.
- TEMPERATURE INVERSIONS  
Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.
- WIND  
Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.  
Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.
- Boom-less Ground Applications:  
Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.
- Handheld Technology Applications:  
Take precautions to minimize spray drift.

## **APPLICATION INFORMATION**

### **PREEMERGENCE APPLICATION**

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

### **POSTEMERGENCE APPLICATION**

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

### **ADDITIVES**

### **POSTEMERGENCE**

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

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

#### **JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND THIS PRODUCT**

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

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

#### **APPLICATION EQUIPMENT**

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

#### **BROADCAST APPLICATION**

Apply this product, and this product's tank mixes, with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume. For preemergence applications, a minimum of 10 gallons of spray solution per acre must be used to ensure uniform coverage. Use higher volumes after weeds have emerged.

#### **BAND APPLICATION**

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

#### **HANDGUN APPLICATION**

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

#### **AERIAL APPLICATION**

To obtain satisfactory weed control with aerial applications of this product, uniform coverage must be obtained. **DO NOT** spray when drift is possible or when wind velocity is more than 15 mph. **Avoid** spraying this product within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and drift, the following directions must be observed:

### Volume Pressure

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

### Nozzles and Nozzle Operation

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

### SPRAYER PREPARATION

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

### MIXING INSTRUCTIONS

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

[For Best Results - Mix with water having pH of 5 to 7. If pH is higher than 7, use an appropriate buffer to reduce pH to desirable range. Fill clean spray tank 1/2 full of desired level with water and add buffering agent if necessary.](#)

### SPRAYER CLEANUP

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

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

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

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

- Add enough clean water to the spray tank to allow all hoses, booms, screens and nozzles to be flushed for 2 minutes.
- Remove all nozzles and screens and rinse them with clean water.

## APPLICATION INSTRUCTIONS

**Broadcast Application:** Apply **Flumi-Imazapic** at 16 to 24 fl oz (0.25-0.38 lb. ai flumioxazin / 0.13-0.19 lb ae imazapic) per acre. **DO NOT** apply more than 24 fl oz of **Flumi-Imazapic** (0.38 lb. ai flumioxazin / 0.19 lb. ae imazapic) per acre per year. For best preemergence residual activity, **Flumi-Imazapic** must be activated by rainfall. Make applications to take advantage of normal rainfall patterns (minimum of ½ inch) and cooler temperatures. For best results, moisture for activation must occur within 2-3 weeks after application.

**Spot treatments:** For weed control in bareground or total vegetation, **Flumi-Imazapic** can be applied to small areas. Mix **Flumi-Imazapic** at 0.75-1.0% solution v/v with 0.25-0.5% v/v methylated seed oil (MSO). **DO NOT** apply more than 0.55 fl. oz. **Flumi-Imazapic** per 1,000 sq. ft.

### TOLERANCE OF TREES AND BRUSH TO FLUMI-IMAZAPIC

When **Flumi-Imazapic** is applied in and around desirable tree and brush species, follow these general instructions:

1. **Flumi-Imazapic** may not be used on nursery, orchard, ornamental plantings, new plantings, seedling trees or fiber farms.
2. Apply **Flumi-Imazapic** to a limited area to determine tolerance in the area.
3. Apply **Flumi-Imazapic** at rates up to 24 fl oz (0.38 lb. ai flumioxazin / 0.19 lb. ae imazapic) per acre.
4. Severe injury or death may result if **Flumi-Imazapic** is applied to tree and brush species that are under stress due to drought, insects or other factors that might make the plant more susceptible to injury.
5. Tip chlorosis and minor necrosis may be seen on some species.
6. Use application methods that decrease foliar contact as injury in the form of defoliation and terminal death may occur.
7. A list of tolerant tree and brush species to **Flumi-Imazapic** is provided in Table 2 below. Tree species listed in Table 2 are tolerant of Flumi-Imazapic when applied to the soil under the leaf canopy. Direct application to the leaves may result in tree injury.

If making a fall application of **Flumi-Imazapic**, delay the application until after leaves have begun to senesce or drop to avoid potential foliar injury to tree and brush species. Fall applications can be made to conifer species as they are generally tolerant to **Flumi-Imazapic**.

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

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

**Table 2. Trees and Brush Tolerant to Flumi-Imazapic\***

Ash	Pine
Buckeye	Plum
Dogwood	Poplar
Fir	Redbud
Hawthorn	Spruce
Juniper	Sycamore

Lilac	Walnut
Maple	Willow
Oak	
Peach	
<b>Note: DO NOT</b> use around ornamental or fruit bearing trees. Avoid having the spray contact the foliage. Other species may show tolerance. Conduct testing prior to treatment around other species.	

## WEEDS CONTROLLED

### Broadleaf Weeds

Common Name	Scientific Name
Alyssum, Hoary	<i>Berteroa incana</i>
Amaranth	
Palmer	<i>Amaranthus palmeri</i>
Spiny	<i>Amaranthus spinosus</i>
American Burnweed	<i>Erechtites hieracifolia</i>
Anoda, Spurred	<i>Anoda cristata</i>
Baby's Breath	<i>Gysophila paniculata</i>
Bedstraw, Catchweed	<i>Galium aparine</i>
Beggarweed, Florida	<i>Desmodium Tortuosum</i>
Bindweed, Field	<i>Convolvulus arvensis</i>
Bittercress, Hairy	<i>Cardamine hirsute</i>
Buffalobur	<i>Solanum rostratum</i>
Burclover, California	<i>Medicago polymorpha</i>
Buttercup, Bur	<i>Ranunculus testiculatus</i>
Carpetweed	<i>Mollugo verticillata</i>
Chamberbitter	<i>Phyllanthus urinaria</i>
Chickweed	
Common	<i>Stellaria media</i>
Mouseear	<i>Cerastium vulgatum</i>
Cocklebur, Common	<i>Xanthium strumarium</i>
Cornsalad, Common	<i>Valerianella locusta</i>
Croton, Tropic	<i>Croton glandulosus var. septentrionalis</i>
Dandelion	<i>Taraxacum officinale</i>
Dock, Curly	<i>Rumex crispus</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Doveweed	<i>Murdannia nudiflora</i>
Eclipta	<i>Eclipta prostrata</i>
Filaree, Redstem	<i>Erodium cicutarium</i>
Fleabane, Annual	<i>Erigeron annuus</i>
Galinsoga, Hairy	<i>Galinsoga ciliata</i>
Geranium	
Carolina	<i>Geranium carolinianum</i>

Common Name	Scientific Name
Morningglory	
Entireleaf	<i>Ipomoea hederacea var. integruscula</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 spp.</i>
Mulberry Weed	<i>Fatua villosa</i>
Mustard	
Tumble	<i>Sisymbrium altissimum</i>
Wild	<i>Brassica kaber</i>
Nightshade	
Black	<i>Solanum nigrum</i>
Eastern Black	<i>Solanum ptycanthum</i>
Hairy	<i>Solanum sarrachoides</i>
Northern Willowherb	<i>Epilobium cillatum</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>
Pondweed, Sago	<i>Potamogeton pectinatus</i>
Puncturevine	<i>Tribulus terrestris</i>

Cranesbill	<i>Geranium maculatum</i>	Purslane, Common	<i>Portulaca oleracea</i>
Ground Cherry	<i>Physalis heterophylla</i>	Pusley, Florida	<i>Richardia scabra</i>
Groundsel, Common	<i>Senecio vulgaris</i>	Queen Anne's Lace	<i>Daucus carota</i>
Groundsel Tree	<i>Baccharis halimifolia</i>	Radish, Wild	<i>Raphanus raphanistrum</i>
Halogeton	<i>Halogeton glomeratus</i>	Ragweed	
Hemlock, Poison	<i>Conium maculatum</i>	Common	<i>Ambrosia artemisiifolia</i>
Henbit	<i>Lamium amplexicaule</i>	Giant	<i>Ambrosia trifida</i>
Horseweed	<i>Conyza Canadensis</i>	Redmaids	<i>Calandrinia ciliata</i>
Houndstongue, Bristly	<i>Cynoglossum officinale</i>	Redweed	<i>Melochia corchorifolia</i>
Indigo, Hairy	<i>Indigofera hirsuta</i>	Rocket, Yellow	<i>Barbarea vulgaris</i>
Ivy, Ground	<i>Glechoma hederacea</i>	Senna, Coffee	<i>Cassia occidentalis</i>
Jimsonweed	<i>Datura stramonium</i>	Sesbania, Hemp	<i>Sesbania exaltata</i>
Knapweed, Russian	<i>Centaurea repens</i>	Shepherd's-Purse	<i>Capsella bursa-pastoris</i>
Knotweed, Prostrate	<i>Polygonum aviculare</i>	Sicklepod	<i>Senna obtusifolia</i>
Kochia	<i>Kochia scoparia</i>	Sida, Prickly (Teaweed)	<i>Sida spinosa</i>
Kyllinga, Green	<i>Kyllinga brevifolia</i>	Smartweed	
Ladysthumb	<i>Polygonum persicaria</i>	Ladysthumb	<i>Polygonum persicaria</i>
Lambsquarters, Common	<i>Chenopodium album</i>	Pennsylvania	<i>Polygonum pennsylvanicum</i>
Liverwort	<i>Marchantia polymorpha</i>	Swamp	<i>Polygonum coccineum</i>
Mallow		Sowthistle, Annual	<i>Sonchus oleraceus</i>
Common	<i>Malva neglecta</i>	Spiderwort, Tropical	<i>Commelina benghalensis</i>
Little	<i>Malva parviflora</i>	Spurge	
Venice	<i>Hibiscus trionum</i>	Flax	<i>Thymelaea passerina</i>
Marsh Parsley	<i>Apium leptophyllum</i>	Leafy	<i>Euphorbia esula</i>
Mayweed	<i>Anthemis cotula</i>	Petty	<i>Euphorbia peplus</i>
		Prostrate	<i>Euphorbia humistrata</i> Engelm
		Spotted	<i>Euphorbia maculata</i>
		Toothed	<i>Euphorbia dentate</i>
		Starbur, Bristly	<i>Acanthospermum hispidum</i>
		Tassel-flower	<i>Emilia spp.</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>

## Grasses

Common Name	Scientific Name
Bahiagrass	<i>Paspalum notatum</i>
Barley, little	<i>Bhordeum pusillum</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bluegrass, Annual	<i>Poa annua</i>
Bromegrass, meadow	<i>Bromus commutatus</i>
Crabgrass Large Smooth Southern	<i>Digitaria sanguinalis</i> <i>Digitaria ischaemum</i> <i>Digitaria ciliaris</i>
Dallisgrass	<i>Paspalum dilatatum</i>
Downy brome (cheatgrass)	<i>Btomus tectorum</i>
Fescue, tall	<i>Festuca arundinacea</i>
Foxtail Bristly Giant Green Yellow	<i>Setaria verticillate</i> <i>Setaria faberi</i> <i>Setaria viridis</i> <i>Setaria glauca</i>
Goatgrass, Jointed	<i>Aegilops cylindrica</i>
Goosegrass	<i>Eleusine indica</i>
Johnsongrass	<i>Sorghum halepense</i>
Lovegrass, California	<i>Eragrostis diffusa</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Nutsedge	<i>Cyperus</i> spp.
Oats, wild	<i>Avena fatua</i>
Panicum Fall Texas	<i>Panicum dichotomiflorum</i> <i>Panicum texanum</i>
Redtop	<i>Agrostis gigantea</i>
Reed canarygrass	<i>Phalaris arundinacea</i>
Ryegrass Annual Italian	<i>Lolium perenne</i> <i>Festuca perennis</i>
Sandbur	<i>Cenchrus</i> spp.
Sedge	<i>Juncus</i> spp.
Shattercane	<i>Sorghum bicolor</i>
Signalgrass	<i>Brachiaria platyphylla</i>
Stiltgrass, Japanese	<i>Microstegium vimineum</i>
Switchgrass	<i>Panicum virgatum</i>
Timothy	<i>Phleum pratense</i>
Vaseygrass	<i>Paspalum urvillei</i>

### STORAGE AND DISPOSAL

**DO NOT** contaminate water, food or feed by storage, disposal or cleaning of equipment.

#### STORAGE

Keep pesticide in original container. Store in a cool, dry, secure place. **DO NOT** put formulation or dilute spray solution into food or drink containers. **DO NOT** contaminate food or foodstuffs. **DO NOT** store or

transport near feed or food. Not for use or storage in or around the home. For help with any spill, leak, fire or exposure involving this material, call day or night **CHEMTREC (800) 424-9300**.

#### **PESTICIDE DISPOSAL**

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

#### **CONTAINER HANDLING:**

**[Nonrefillable plastic containers 5 gallons or less:]** [Nonrefillable container. **DO NOT** reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.]

**[Nonrefillable plastic containers larger than 5 gallons:]** [Nonrefillable container. **DO NOT** reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.]

**[Refillable plastic containers larger than 5 gallons:]** [Refillable container. Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.]

#### **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 warranty 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.

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