



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

May 16, 2019

Carrie M. Tackema  
Sr. Regulatory Manager  
Nufarm Americas Inc  
4020 Aerial Center Parkway  
Morrisville, NC 27560

Subject: Label Amendment – minor label change  
Product Name: NUP-18013  
EPA Registration Number: 228-743  
Application Date: 05/13/2019  
Decision Number: 550963

Dear Ms. Tackema:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.


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 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) list 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.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance

Page 2 of 2  
EPA Reg. No. 228-743  
Decision No. 550963

with FIFRA section 6. If you have any questions, please contact Manjula Unnikrishnan by phone at 703-347-8520, or via email at [unnikrishnan.manjula@epa.gov](mailto:unnikrishnan.manjula@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Erik Kraft". The signature is fluid and cursive, with the first name "Erik" being more prominent than the last name "Kraft".

Erik Kraft, Product Manager 24  
Fungicide and Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

Enclosure

# NUP-18013

A COMPLETE BROAD SPECTRUM NONSELECTIVE POSTEMERGENCE HERBICIDE

**ACTIVE INGREDIENT:**

Glufosinate ammonium\* ..... 24.5%\*\*

**OTHER INGREDIENTS:** ..... 75.5%

**TOTAL:** ..... 100.0%

\*CAS Number 77182-82-2

\*\*Equivalent to 2.34 pounds of active ingredient per gallon

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

## KEEP OUT OF REACH OF CHILDREN

# 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 BOOKLET FOR ADDITIONAL FIRST AID AND PRECAUTIONARY STATEMENTS**

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

### FIRST AID

<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>•Call a poison control center or doctor immediately for treatment advice.</li> <li>•Have person sip a glass of water if able to swallow.</li> <li>•Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>•Do not give anything by mouth to an unconscious person.</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>
<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 mouth-to-mouth if possible.</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. You may also contact 1-877-325-1840 for emergency medical treatment information.

### NOTE TO PHYSICIAN

If this product is ingested, endotracheal intubation and gastric lavage should be performed as soon as possible, followed by charcoal and sodium sulfate administration.

EPA REG. NO. 228-743  
 EPA EST. NO.

MANUFACTURED FOR  
 Nufarm Inc.  
 11901 SOUTH AUSTIN AVENUE  
 ALSIP, IL 60803



**NET CONTENTS:**

[Designation as "NONREFILLABLE" or "REFILLABLE" for containers >5]

228-xxx.20190516.draft

<p><b>ACCEPTED</b></p> <p><b>05/16/2019</b></p> <p>Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 228-743</p>
---

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION**

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes or clothing. Avoid breathing vapor. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

**Personal Protective Equipment (PPE)**

**Applicators and other handlers must wear:**

- Long sleeved shirt and long pants;
- Chemical-resistant gloves;
- Shoes and socks;
- Protective eyewear (goggles, face shield or safety glasses).

Mixers/loaders supporting aerial applications must wear a minimum of a NIOSH approved filtering face piece respirator with any N filter (TC-84A). You can also use other NIOSH approved particulate respirators that offer more protection.

Applicators using groundboom equipment with open cabs to treat cotton must wear long-sleeve shirts, long pants, shoes, and socks plus chemical-resistant gloves.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. 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/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 possible, wash thoroughly and change into clean clothing.

**ENGINEERING CONTROLS STATEMENT**

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

**ENVIRONMENTAL HAZARDS**

Do not apply directly to water or to areas where surface water is present. Do not apply to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters or rinsate.

This pesticide is toxic to vascular 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, such as no tillage to reduce pesticide run-off. Use of vegetation filter strips along rivers, creeks, streams, wetlands, etc. or on the downhill side of fields where run-off could occur to minimize water run-off is recommended.

**PHYSICAL AND CHEMICAL HAZARDS**

Do not mix or allow contact with oxidizing agents. Hazardous chemical reaction may occur. Combustible. Do not use or store near heat or open flame.

**DIRECTIONS FOR USE**

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

Do not use this product until you have read the entire label. 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 requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**In the State of New York Only: Not for use in Nassau and Suffolk Counties.**

### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses; and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**Restricted entry-interval (REI) 12 hours for all post-application activities**

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

- Coveralls worn over short-sleeved shirt and short pants;
- Chemical resistant gloves;
- Chemical resistant footwear plus socks;
- Protective eyewear (goggles, face shield or safety glasses).

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

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, or greenhouses. Do not enter or allow others to enter treated areas until sprays have dried.

### **PRODUCT INFORMATION**

This product may be applied for the control of undesirable plant vegetation, including emerged annual and perennial grass, sedge and broadleaf weeds in a variety of settings. This product is foliar-active with little or no activity in soil. Weeds that emerge after application will not be controlled. Necrosis of leaves and young shoots occur within 2 to 4 days after application under active growing conditions.

### **RESISTANCE MANAGEMENT**

For resistance management, this product is a Group 10 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 10 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same area. Appropriate resistance management strategies should be followed.

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

- Rotate the use of this product or other Group 10 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and that considers mechanical control methods, cultural (e.g., timing to favor the turf and not the weeds), biological (weed-competitive varieties) and other management practices.
- Scout before and after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method. Prevent movement of resistant weed seeds to other areas by cleaning equipment.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

- For further information or to report non-performance or suspected resistance, contact Nufarm at 1-800-345-3330

### APPLICATION METHODS

When applied as directed in this label, this herbicide controls annual and perennial weeds. Applications may be made on a broadcast, banded or spot treatment basis. Avoid direct spray or drift to desirable vegetation. Regrowth may occur due to the weed stage of growth at application, low use rate, or environmental conditions. Repeat treatments may be necessary to control plants generating from underground parts or seed.

#### Application Restrictions:

- **Do not** apply this product through any type of irrigation system.
- **Do not** apply directly to or allow drift to contact desirable green tissue or green, thin, or uncalloused bark of desirable vegetation.
- **Do not** allow grazing of vegetation treated with this product.

#### Application Precautions:

- Uniform, thorough spray coverage is necessary to achieve consistent weed control.
- This product is rainfast 4 hours after application to most weed species; therefore, rainfall within 4 hours may necessitate retreatment or may result in reduced weed control.
- Weed control may be reduced if application is made when heavy dew, fog, and mist/rain are present; or when weeds are under stress due to environmental conditions such as drought, cool temperatures, or extended periods of cloudiness.
- Plants may be safely planted into treated areas after spray has dried.

#### Compatibility Testing:

- If this product is to be mixed with pesticides, test the compatibility of the intended tank mixture prior to mixing the products in the spray tank. The following procedure assumes a spray volume of 25 gallons per acre. For other spray volumes, adjust the amount of the water used accordingly. Check compatibility as follows:
- Place 1 pint of water from the source that will be used to prepare the spray solution in a clear 1 quart jar.
- For each pound of a dry tank mix partner to be applied per acre, add 1.5 teaspoons to the jar.
- For each 16 fluid ounces of a liquid tank mix partner to be applied per acre, add 0.5 teaspoon to the jar.
- For each 16 fluid ounces of this product to be applied per acre, add 0.5 teaspoon to the jar.
- After adding all the ingredients, place a lid on the jar and tighten. Invert 10 times to mix.
- Let the mixture stand for 15 minutes and evaluate the solution for uniformity and stability. Look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. If the tank mix partners are not compatible, do not use the mixture in a spray tank.
- After compatibility testing is complete, dispose of any pesticide wastes in accordance with the STORAGE AND DISPOSAL section of this label.

### MIXING INSTRUCTIONS:

**Tank Mix Instructions:** 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. Prior to adding this product to the spray tank, ensure that the spray tank is thoroughly clean, particularly if an herbicide with the potential to injure crops was previously used (see Cleaning Instructions).

Mix this product with water to make a finished spray solution as follows:

1. Properly calibrate and clean equipment
2. Fill the spray tank half full with water.
3. Start agitation.
4. If mixing with a flowable/wettable powder tank mix partner, prepare a slurry of the proper amount of the product in a small amount of water. Add the slurry to the spray tank.
5. If hard water is a concern, add 17 lbs per 100 gallons of spray solution of ammonium sulfate (AMS) to the spray tank. No surfactant is required when applying this product.
6. If mixing with a liquid tank mix partner, add the liquid mix partner next.
7. Complete filling the spray tank with water before adding this product, as foaming may occur.
8. Add the proper amount of this product and continue agitation.
9. If foaming occurs, use a silicone-based antifoam agent.

Ensure that all spray system lines including pipes, booms, etc. have the correct concentration of spray solution by flushing out the spray system lines before starting the crop application. Maintain good agitation at all times until contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to re-suspend the mixture before spraying is resumed. Keep bypass line on or near bottom of tank to minimize foaming. Screen size in nozzles or line strainers must be 50 mesh or larger.

### Cleaning Instructions:

Before using this product, thoroughly clean bulk storage tank, refillable tank, nurse tanks, spray tank, lines, and filter, particularly if an herbicide with the potential to injure crops was previously used. Thoroughly rinse equipment using a commercial tank cleaner and as instructed on the prior herbicide label.

After using this product, triple rinse the spray equipment and clean with a commercial tank cleaner before using the equipment. Make sure any rinsate or foam is thoroughly removed from spray tank and boom. Rinsate may be disposed following the pesticide disposal directions on this label.

#### MANDATORY SPRAY DRIFT

- When applying to crops via aerial application equipment, the spray boom must be mounted on the aircraft so as to minimize drift caused by wing tip or rotor blade vortices. The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
- When applying to crops via aerial application equipment, applicators must use ½ swath displacement upwind at the downwind edge of the field.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.
- Spray the appropriate boom height based on nozzle selection and nozzle spacing, but do not exceed a boom height of 24 inches above target pest or crop canopy. Set boom to lowest effective height over the target pest or crop canopy based on equipment manufacturer's directions. Automated boom height controllers are recommended with large booms to better maintain optimum nozzle to canopy height. Excessive boom height will increase the potential for spray drift.
- For aerial applications, do not release spray at a height greater than 10 feet above the crop canopy, unless a greater application height is required for pilot safety.
- For non-crop vegetation management ground applications, apply with the nozzle height no more than 4 feet above the ground or target vegetation, unless necessitated by the application equipment. Examples would include roadside, railroad, utility rights of way, forestry and other industrial vegetation management applications where safety or natural barriers obstruct application.
- For ground applications and aerial applications, select nozzle and pressure that deliver medium to coarse spray droplets as indicated in nozzle manufacturer's catalogues and in accordance with ASABE Standard 572.1.

#### SPRAY DRIFT ADVISORIES

##### POLLINATOR ADVISORY STATEMENT

This product contains an herbicide. Follow all label directions and precautions to minimize potential off-target exposure in order to prevent effects to non-target plants adjacent to the treated site which may serve as habitat or forage for pollinators.

##### • SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

##### • Importance of Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS!** See Wind, Temperature and Humidity, and Temperature Inversions sections of this label.

##### • Techniques for Controlling Droplet Size

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure – Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**
- Nozzle Type – Use a nozzle type that is designed for the intended application. With most nozzle types, narrow spray angles produce larger droplets. Consider using low-drift nozzles.
- Controlling Droplet Size – Aircraft
- Number of Nozzles – Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations. **AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.**
- Nozzle Type – Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- Boom Length – Longer booms increase drift potential. Therefore a shorter boom length is recommended.
- Application height – Application more than 10 ft. above the canopy increases the potential for spray drift.
- Boom Height

Setting the boom at the lowest referenced height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

##### • Drift Reduction Technology (DRT)

The EPA Drift Reduction Technology (DRT) Program was developed to encourage the manufacturer, marketing, and use of spray technologies scientifically verified to significantly reduce pesticide drift. The use of DRTs should result in significantly less pesticide from spray applications drifting and being deposited in areas not targeted by those applications, compared to spray technologies that do not

meet the minimum DRT standard. EPA-verified drift reduction technologies (DRTs) and their ratings will be added to the following webpage when they become available: <https://www.epa.gov/reducing-pesticide-drift/epa-verified-and-rated-drift-reduction-technologies>

- Wind

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors including droplet size and equipment type determine drift potential at any given wind speed. AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS. Note: Local terrain can influence wind patterns. Every applicator needs to be familiar with local wind patterns and how they affect spray drift.

- Temperature and Humidity

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

- Temperature Inversions

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified 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.

- Shielded Sprayers

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

---

## USE SITES AND APPLICATION DIRECTIONS

---

When applied as directed, this product non-selectively controls undesirable plant vegetation in the following areas: airfields, airports, alleys, lanes, paths, trails, access roads, around commercial or industrial structures or outbuildings, around farm and ranch structures and outbuildings, around ornamental gardens, around ornamental trees and shrubs (including Christmas trees), bare ground, beaches\*, campgrounds, construction sites, ditch banks, drive-in theaters, driveways and ramps, dry ditches and canals, fences and fencerows, firebreaks, golf courses\*, gravel yards, habitat restoration and management areas, highways and roadsides (including aprons, medians, guardrails and right of ways), industrial plant sites, industrial areas, lumber yards, landscapes and mulched areas, natural areas, parking areas, parks, paved areas, petroleum and other tank farms, pumping installations, pipeline, power, telephone and utility rights-of-way, power stations, preplant to turf and ornamental plants, railroad rights-of way, recreation areas, refineries, resorts, schools, sidewalks, sports areas, storage areas, substations, tennis courts, shelter belts, uncropped farmstead areas, vacant lots, walkways, wastelands, wildlife habitat areas.

\*Not for use in CA

### RESTRICTIONS

#### **Maximum Rate – Annual**

- Do not apply more than 82 fl. oz. of this product per acre per year (1.5 lb. ai/A/year).

#### **Maximum Rate – Single Application**

- Do not apply more than 82 fl. oz. of this product per acre per single application (1.5 lb. ai/A/application).

#### **Maximum Number of Applications Per Year**

Do not apply more than a total of 3 broadcast applications per year when using reduced application rates (not to exceed a maximum of 1.5 lb. ai/A/year).

#### **Re-treatment Interval:**

- Minimum re-treatment interval is 5 days.

### APPLICATION RATES

Mix 0.5 to 2.0 fl. oz. (0.009 to 0.036 lb. ai) of this product per gallon of spray solution (24 to 82 fl. oz./A (0.44 to 1.5 lb. ai/A) and apply 1 gallon of spray solution to 1,000 square feet to actively growing weeds. Determine proper use rate based on weed size in Table 1. Larger weeds will require a higher use rate and see Table 1 for details.



**Table 1: USE RATE FOR THIS HERBICIDE**

Apply this product at the rates listed below for broadcast applications based on weed size and stage of growth.

Weed Size and Stage	Rate of this product (Per Gallon of Water)	Rate of this product (Per Acre)
Easily Controlled Weeds < 3 in height*	0.5 fl. oz. (0.009 lb. ai)	24 fl. oz./A (0.44 lb. ai)
Weeds < 3 in height	1.0 fl. oz. (0.018 lb. ai)	48 fl. oz./A (0.88 lb. ai)
Weeds < 6 in height pre-tiller grasses	1.25 fl. oz. (0.023 lb. ai)	56 fl. oz./A (1.0 lb. ai)
Weeds > 6 in height and/or grasses that have tillered	1.25 to 2.0 fl. oz. (0.023 to 0.036 lb. ai)	56-82 fl. oz./A (1.0 to 1.5 lb. ai)

\*See Weeds Controlled Table below for details.

For spot or directed spray applications by backpack sprayers, mix this product at 0.5 to 2.0 fl. oz. of product (0.009 to 0.036 lb. ai) per gallon of water. Larger and more difficult to control weeds require a higher use rate. When using the per gallon rate, calibrate sprayers to deliver 1 gallon of spray solution per 500 to 1,000 square feet. Thorough spray coverage of weeds is necessary to maximize weed control. Spray coverage needs to be uniform, but do not spray to the point of runoff. Thoroughly clean the sprayer following use. Do not make spot or directed spray applications to desired plant foliage or stems as injury may occur.

**Use Restrictions:**

- Do not apply this product within any enclosed structure in residential or commercial landscapes.
- Do not apply this product over-the-top as a broadcast application to ornamentals.
- Do not apply this product over the top of ornamental plants, and do not allow spray of this product to contact or drift onto the foliage, green stems, exposed roots or fruit of desirable plants. Avoid application of this product under conditions that favor drift of sprays onto desired ornamentals or residential lawns.

This product offers postemergence control of susceptible grasses, sedges and broadleaf weeds (See WEEDS CONTROLLED Table), as well as additional mode of action to assist in the control of resistant weeds.

**IMPORTANT:** Contact with spray or spray drift of this product may cause severe injury or destruction of certain desirable plants, especially herbaceous species such as bedding plants or direct seeded annual and perennial flowers. The use of spray shields that limit the plant exposure to this product is highly advised when applying this product near desirable plants.

**Trim and Edge:** This product may be used to trim and edge around trees, buildings, sidewalks, roads, potted plants and other objects in a nursery setting, along fences, in dry ditches and canals, and prior to planting landscape ornamentals.

**Site Preparation:** Following preplant applications of this product, any ornamental, nursery species or Christmas Tree species may be planted. Precautions need to be taken to protect nontarget plants during site preparation applications.

**Greenhouse:** This product may be used to control weeds listed on this label which are growing in greenhouses. Desirable vegetation must not be present during application and air circulation fans must be turned off.

**Industrial:** This product may be used to improve line-of-sight at railroad crossings and reduce the need for mowing along rights-of-way, and wayside structures. This product may be tank mixed with other herbicides for these use sites unless specifically prohibited by the product label.

**Conservation Reserve Program (CRP)\*:** This product can be used to control undesirable vegetation when rotating out of CRP acres or to suppress competitive growth and seed production of undesirable vegetation in CRP acres. For selective applications with broadcast spray equipment, apply 48 to to 56 fl. oz./A (0.88 to 1.0 lb. ai/A) of this product in early spring before desirable CRP grasses, including crested and tall wheatgrass, break dormancy and initiate green growth. Late fall applications can be made after desirable perennial grasses have reached dormancy. Some stunting of CRP perennial grasses will occur if applications are made when plants are not dormant.

\* Not for use in CA

**Wildlife Food Plots\*:** This product may be used as a site preparation treatment prior to planting wildlife food plots. Any wildlife food species may be planted after applying this product, or native species may be allowed to repopulate the area. If tillage is needed to prepare a seedbed, wait 7 days after applying this product before tilling.

\* Not for use in CA

**Dormant Bermudagrass and/or Bahiagrass\*:** When applied to dormant Bermudagrass and/or Bahiagrass\*, this product will provide control or suppression of many winter annual weeds. Treat with 56 to 82 fl. oz./A (1.0-1.5 lb. ai/A) only when residential lawns are fully dormant in late fall or winter and prior to spring green-up. Spot treatments or broadcast applications of this product to non-dormant turfgrass may result in injury or delayed green-up. Avoid high volume and spot applications where spray volume exceeds 80 gallons per acre or injury or delayed green-up may occur. Applications to residential lawns are limited to spot treatments only. The maximum application rate must not exceed 4 fl. oz./gal. of water/1000 sq. ft. (corresponding to a rate of 0.0312 lb. ai/100 sq. ft.). Applications for renovating Bermudagrass lawns must be conducted when the weather is cool and Bermudagrass is dormant.

\*Not for use in CA

**Tank Mixtures:** 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.

This herbicide can be tank mixed with other non-selective herbicides including glyphosate and preemergence residual herbicides including flumioxazin. Follow the most restrictive label restrictions and precautions for each product. A combination with a residual herbicide including flumioxazin provides effective control of existing weeds as well as lasting residual weed control in areas such as landscape beds and xeriscapes.

## WEEDS CONTROLLED

Alfalfa+	Gallinsoga, small flower+	Pokeweed+
Alkali sida	Geranium, cutleaf+	Puncturevine
Amaranth, Palmer+	Goosefoot	Purslane, common**^
Ammannia, purple	Goosegrass*^	Pusley, Florida+
Anoda, spurred*^	Goldenrod, gray	Quackgrass
Arrowhead, California	Gromwell, field	Radish, wild
Artichoke, Jerusalem+	Groundcherry, cutleaf	Ragweed, common
Aster, white heath	Groundsell, common	Ragweed, giant
Barley, volunteer*^	Guineagrass	Redmaids
Barnyardgrass*	Hempnettle+	Rocket, yellow
Beggarweed, Florida+	Henbit	Rose, wild
Bermudagrass+	Horsenettle, Carolina*^	<i>Rubus</i> spp.
Bindweed, field	Horsetail	Rice, red+
Bindweed, hedge	Johnsongrass, rhizome+	Rice, volunteer+
Black medic+	Johnsongrass, seedling*^	Rush, toad***
Bluegrass, annual	Jimsonweed	Ryegrass, annual**
Bluegrass, Kentucky	Junglerice*^	Sandbur, field
Blueweed, Texas+	Knotweed*^	Senna coffee+
Brome, ripgut	Kochia	Shattercane
Bromegrass, downy	Ladysthumb+	Shepherd's Purse
Bromegrass, smooth	Lambsquarters, common	Sicklepod (java bean)+
Buckwheat, wild	Lettuce, miners	Sida, prickly+
Buffalobur	Lettuce, prickly	Signalgrass, broadleaf*^
Bulrush***	London rocket	Smartweed, Pennsylvania
Burclover, California	Lovegrass	Smellmelon+
Burcucumber+	Mallow, common	Sowthistle, annual
Burdock	Mallow, Venice+	Sowthistle, perennial+
Bursage, woolyleaf+	Malva (little mallow)	Soybean, volunteer+
Canarygrass	Marestail	Sprangletop
Carpetweed	Marshelder, annual+	Spurge, prostrate*^
Catchweed bedstraw (cleavers) *^	Mayweed	Spurge, leafy
Chess, soft	Milkweed, common***+	Spurge, spotted*^
Chickweed, common	Milkweed, honeyvine***+	Starbur, bristly+
Chickweed, mouse-ear+	Millet, wild proso+	Starthistle, yellow
Chinese thornapple	Millet, proso volunteer+	Stinkgrass
Clover, Alsike	Morningglory, entireleaf	Sunflower, common
Clover, red	Morningglory, ivyleaf	Sunflower, prairie*^
Clover, white	Morningglory, pitted	Sunflower, volunteer
Cocklebur, common	Morningglory, sharppod*^	Swinecress
Copperleaf, hophornbeam+	Morningglory, smallflower+	Thistle, bull
Copperleaf, Virginia	Morningglory, tall+	Thistle, Canada
Corn, volunteer+	Muhly, wirestem***+	Thistle, musk
Cotton, volunteer+	Mullein, common	Thistle, Russian
Crabgrass, large*^	Mullein, turkey	Timothy+
Crabgrass, smooth*^	Mustard, tansy	Torpedograss
Croton, tropic*^	Mustard, wild	Turnip, wild
Croton, woolly*^	Nettle	Vaseygrass
Cudweed	Nightshade, black	Velvetleaf*^
Cupgrass, woolly	Nightshade, eastern black	Vervain
Cutleaf eveningprimrose	Nightshade, hairy	Vetch
Dallisgrass	Nightshade, silverleaf+	Waterhemp, common+
Dandelion	Nutsedge, purple	Waterhemp, tall+
Devil's claw*^	Nutsedge, yellow	Wheat, volunteer
Dock, curly	Oat, wild*^	Willowherb, panicle
Dock, smooth+	Onion, wild	Windgrass
Dodder	Orchardgrass	Witchgrass
Dogbane (hemp)	Panicum, fall*^	Woodsorrel
Eclipta	Panicum, Texas	Wormwood, biennial+
Fescue	Paragrass	Yarrow, common
Fleabane, annual	Pennycress	
Fiddleneck	Pigweed, redroot*^	
Filaree	Pigweed, prostrate*^	
Filaree, redstem	Pigweed, spiny*^	
Foxtail, bristly+	Pigweed, smooth*^	
Foxtail, giant	Pigweed, tumble*^	
Foxtail, green	Pineapple weed	
Foxtail, robust purple+	Plantain	
Foxtail, yellow*^	Pointsettia, wild+	
Gallinsoga, hairy+	Poison ivy/oak	

+Not for use in CA

^Use rate in CA 24 fl. oz./A (0.44 lb. ai)

\*easily controlled species

\*\*apply to annual ryegrass prior to 3 inches in height

\*\*\*indicates suppression only

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Do not use or store near heat or open flame. Keep container tightly closed and dry in a cool, well ventilated place. Storage temperature must not exceed 125° F. If storage temperature of this product is below 32° F, the material must not be pumped until its temperature exceeds 32° F. Protect against direct sunlight.

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

### CONTAINER HANDLING:

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

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

**[Non-refillable Containers 5 Gallons or Less:]** Non-refillable 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 and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

**[Non-refillable Containers Larger than 5 Gallons:]** Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. 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 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.

**[Refillable Containers Larger than 5 Gallons:]** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

**[Refillable Container:]** Refill this container with pesticide only. Do not reuse this container for any other purpose. Close all openings and replace all caps. Contact Nufarm’s Customer Service Department at 1-800-345-3330 to arrange for return of the empty refillable container.

### **WARRANTY DISCLAIMER**

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

### **LIMITATION OF LIABILITY**

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR FOR DAMAGES IN THEIR NATURE OF PENALTIES RELATING TO THE GOODS SOLD, INCLUDING USE, APPLICATION, HANDLING, AND DISPOSAL. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER OR SELLER SHALL NOT BE LIABLE TO BUYER OR USER BY WAY OF INDEMNIFICATION TO BUYER OR TO CUSTOMERS OF BUYER, IF ANY, OR FOR ANY DAMAGES OR SUMS OF MONEY, CLAIMS OR DEMANDS WHATSOEVER, RESULTING FROM OR BY REASON OF, OR ARISING OUT OF THE MISUSE, OR FAILURE TO FOLLOW LABEL WARNINGS OR INSTRUCTIONS FOR USE, OF THE GOODS SOLD BY MANUFACTURER OR SELLER TO BUYER. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER, USER, OR ITS CUSTOMERS. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S OR USER'S EXCLUSIVE REMEDY, AND MANUFACTURER'S OR SELLER'S TOTAL LIABILITY SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.

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

(RV051619)

**Optional Marketing Claims:**

Nufarm Grow a better tomorrow.  
Grow a better tomorrow.

[Note to reviewer: Any text found in brackets “[ ”] is optional on container label.]