



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

March 24, 2021

Craig Kleppe  
Product Registration Manager  
BASF Agricultural Solutions  
26 Davis Drive  
Research Triangle Park, North Carolina

Subject: Registration Review Label Mitigation for Glufosinate  
Product Name: Derringer Herbicide  
EPA Registration Number: 7969-443 (formerly 432-1228)  
Application Dates: 11/30/2017  
Decision Numbers: 572263

Dear Mr. Kleppe:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Glufosinate Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

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.

A copy of your label stamped "Accepted" is enclosed. Products shipped after 12 months from the date of this amendment must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

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If you have any questions about this letter, please contact Darius Stanton by phone at 703-347-0433, or via email at [Stanton.darius@epa.gov](mailto:Stanton.darius@epa.gov).

Sincerely,



Linda Arrington, Branch Chief  
Risk Management and Implementation Branch 4  
Pesticide Re-Evaluation Division  
Office of Pesticide Programs

Enclosure

Glufosinate	Group	10	Herbicide
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# DERRINGER™ Herbicide

## ABN: FINALE VU HERBICIDE SOLUBLE CONCENTRATE

FOR NON-SELECTIVE POSTEMERGENCE WEED CONTROL IN NON-CROP AREAS AND FOR SITE PREPARATION IN CONIFER AND HARDWOOD TREE PRODUCTION AREAS

Editorial Note – [Bracketed text] is optional language

**ACTIVE INGREDIENT:**

Glufosinate Ammonium\*.....11.33%\*\*

**OTHER INGREDIENTS:** .....88.67%

**TOTAL:** .....100.00%

\*CAS Number 77182-82-2

\*\*Contains 1.0 pound of active ingredient per U.S. gallon.

EPA Reg. No. 7969-443

EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN  
WARNING / AVISO**

**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 [side][&][back] [panel] [inside] [attached] [leaflet] [booklet][bag] [carton][attached to] [individual containers][for complete] [First Aid Instructions] [Precautionary Statements], [Precautions][Directions] [for Use] [and] [Storage and Disposal] [Instructions][Information]]

For **MEDICAL** and **TRANSPORTATION** Emergencies **ONLY** Call 24 Hours A Day 1-800-334-7577

For **PRODUCT USE** Information Call 1-800-331-2867

FIRST AID	
<b>If swallowed:</b>	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything to an unconscious person.
<b>If in eyes:</b>	Hold eyes open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.
<b>If on skin:</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 - 20 minutes. Call a poison control center or doctor for treatment advice.
<b>If inhaled:</b>	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
<b>NOTE TO PHYSICIAN:</b> If this product is ingested, endotracheal intubation and gastric lavage should be performed as soon as possible, followed by charcoal and sodium sulfate administration. <b>Additionally, call 1-800-334-7577 immediately for further information.</b>	



# PRECAUTIONARY STATEMENTS

## HAZARDS TO HUMANS AND DOMESTIC ANIMALS

### WARNING

Causes substantial but temporary eye injury. Harmful if swallowed, inhaled, or absorbed through skin. Avoid contact with skin, eyes, or clothing. Avoid breathing vapor or spray mist.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

#### Applicators and other handlers must wear:

Long-sleeved shirt and long pants; chemical-resistant gloves (such as barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, polyvinyl chloride (PVC)  $\geq 14$  mils, or Viton<sup>®</sup>  $\geq 14$  mils) shoes plus socks and protective eyewear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### USER SAFETY RECOMMENDATIONS

#### Users should:

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

## ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Glufosinate and degradates are known to leach through soil into groundwater under certain conditions as a result of label use. This product may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

## 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 any 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.

## PRODUCT INFORMATION

DERRINGER™ Herbicide is a non-selective water-soluble concentrate herbicide for general weed control on terrestrial non-crop sites and for site preparation in conifer and hardwood production areas. Foliar applications may be made on a broadcast, banded, or spot treatment basis depending on the situation. DERRINGER Herbicide can be tank mixed with other herbicides registered for similar uses. When tank mixing, use the most restrictive limitations from the labeling of both products.

When applied as recommended in this label, DERRINGER Herbicide controls a broad spectrum of emerged annual and perennial grasses and broadleaf weeds, including many terrestrial and riparian invasive and noxious weeds. DERRINGER Herbicide will also control or suppress certain woody species (trees, brush, and vines) including conifers. Plants that have not yet emerged at the time of application will not be controlled. THOROUGH SPRAY COVERAGE IS IMPORTANT. Visual effects and control from application of DERRINGER Herbicide occur within 2 to 4 days after application under good growing conditions. Avoid all contact, including direct spray and drift, with foliage or green tissue of desirable plants including green, thin or uncalloused bark. This product is non-selective and will injure or kill all green vegetation contacted by the spray. If desirable vegetation is contacted, rinse the sprayed portion with water immediately.

DERRINGER Herbicide works best when weeds are actively growing. Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures. Weeds under stress or in dense populations require application at the highest recommended rate. Regrowth may occur due to the weed's growth stage at application, use rate, or environmental conditions. Repeat treatments may be necessary to control plants generating from underground reproductive parts or seed.

Aerial applications of DERRINGER Herbicide should be made only under the conditions specified within this label.

DERRINGER Herbicide is rainfast in a minimum of one-half hour and an average of 4 hours after application depending upon weed species, environmental conditions, and herbicide application rate.

## 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.

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls; chemical-resistant gloves such as barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, polyvinyl chloride (PVC)  $\geq 14$  mils, or Viton  $\geq 14$  mils; shoes plus socks; protective eyewear.

## NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. The application for trimming and edging, industrial, recreational and public areas, and farmsteads are not within the scope of the WPS. Keep unprotected persons out of the treated areas until sprays have dried.

## USE RESTRICTIONS for All Uses

**DO NOT** apply more than 6 quarts of DERRINGER Herbicide per acre (1.5 lbs a.i./A) in a single application.

**DO NOT** apply more than 6 quarts of DERRINGER Herbicide per acre (1.5 lbs a.i./A) as a maximum cumulative amount from sequential applications per year.

Maximum number of applications per year: 3

**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.

## USES

### Non-Selective Weed Control

DERRINGER Herbicide is labeled for general weed and brush control on private, public and military lands as follows: uncultivated non-agricultural areas (such as airports, highway, railroad and utility rights-of-way, sewage disposal areas, etc.); uncultivated agricultural areas – non-crop producing (such as farmyards, fuels storage areas, fence rows, ditch banks, dry ditches, barrier strips, etc.); industrial sites – outdoor (such as lumberyards, pipeline, and tank farms, etc.) and natural areas (such as wildlife management areas, wildlife openings, wildlife habitats). Refer to the How to Apply section of this labeling for appropriate application rates to control specific weeds.

### Side Trimming

To control only a portion of the plant, direct the spray solution to thoroughly cover (spray to wet) only the portion of the plant to be controlled. Do not apply more than 6 quarts of DERRINGER Herbicide per acre (1.5 lbs a.i./A) when side trimming.

### Site Preparation for Conifer and Hardwood Production Areas

When applied as recommended on this label, this product may be used for the control of undesirable plants in site preparation prior to planting conifer and hardwood species. Do not apply DERRINGER Herbicide as an over-the-top broadcast spray to desirable conifer or hardwood plantings. Seedling conifer and hardwood trees may be planted

into the treated area after the restricted entry interval (REI) of 12 hours has elapsed. Refer to the How to apply section of this labeling for the appropriate application rates to control specific weeds.

### Weed Control in Dormant Roadside Bermudagrass Turf

DERRINGER Herbicide may be used to control ryegrass and other winter annual weeds in unimproved, dormant roadside Bermudagrass turf. Apply only when the turf is fully dormant and prior to spring green-up or turfgrass injury or delayed green-up may occur. For best results, apply DERRINGER Herbicide at a rate of 3 to 6 quarts per acre (0.75 to 1.5 lbs a.i./A) after most weeds have germinated and are in an early growth stage. Refer to the Broadleaf and Grass Weeds Controlled by DERRINGER Herbicide section of this label for selecting recommended rates. Do not apply more than 6 quarts of DERRINGER Herbicide per acre (1.5 lbs a.i./A) per year for this use. Avoid high volume and spot applications where spray volume exceeds 80 gallons per acre or injury or delayed green-up may occur.

### HOW TO MIX

DERRINGER Herbicide must be mixed with water to make a finished spray solution as follows:

1. Fill the spray tank with the required amount of water.
2. Add the proper amount of this product, then mix thoroughly.

### HOW TO APPLY

#### Spot or Directed Applications

This product may be used as a spot- or directed-spray application. Prepare the desired volume of spray solution by mixing DERRINGER Herbicide in water with the amounts indicated in the following table:

**Table 1.** Amount of DERRINGER Herbicide added to water to make 1, 25, or 100 gallons of spray solution at dosages of 1% to 6%. See **Table 2** for % solution to use based on target vegetation.

% SOLUTION	VOLUME OF SPRAY SOLUTION		
	1 GALLON	25 GALLONS	100 GALLONS
	DERRINGER HERBICIDE		
1%	1.5 fl oz	1 quart	1 gallon
1.5%	2 fl oz	1.5 quarts	1.5 gallons
2.5%	3 fl oz	2.5 quarts	2.5 gallons
3%	4 fl oz	3 quarts	3 gallons
6%	8 fl oz	6 quarts	6 gallons

Select appropriate solution and spray undesirable vegetation foliage on a spray-to-wet basis. Do not apply beyond runoff. Ensure uniform and complete coverage. Use a medium to coarse spray. To minimize drift, avoid spraying during windy conditions. Backpack, pump-up, and hydraulic sprayers may be used. Thoroughly clean the sprayer following use.

#### Broadcast or Boom Applications

Use a minimum of 20 gallons of water per acre with spray pressures no greater than are required to obtain adequate plant coverage.

#### Aerial Applications (Helicopter Application only)

Use a drift control device such as a "Microfoil", "Thru Valve-Boom®" or equivalent drift control system when applying as a foliar treatment to utility rights-of-way, tree production areas, ditch banks or other approved sites that may be near susceptible crops. The application volume required will vary with the height and density of the vegetation and the application equipment used. Generally, aerial applications will require a minimum of 15 gallons per acre to ensure thorough coverage. Do not apply when winds are gusty or under any condition which favor drift on to desirable vegetation. Applications under conditions, which cause drift of this product, will result in damage to vegetation contacted. Drift control additives may be used. If a drift control additive is used, observe and follow all directions and precautions as specified on the additive label.

### SPRAY DRIFT MANAGEMENT

#### Aerial Applications

- 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.
- 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.

### **Ground Boom Applications**

- 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.
- For crop applications, spray at 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 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.

### **Advisory Spray Drift Language**

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 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.

### **Controlling Droplet Size – Ground Boom**

- 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, narrower 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 lower 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.

### **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.

## WEED RESISTANCE MANAGEMENT

DERRINGER Herbicide contains the active ingredient glufosinate-ammonium which is Group 10 Herbicides based on the mode of action classification system of the Weed Science Society of America. When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected.

Follow the best management practices listed below to delay the development of herbicide resistant weeds.

- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- 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.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of actions for each target weed.
- Report any incidence of non-performance of this product against a particular weed species to your Bayer distributor, Bayer representative or call 1-800-331-2867.
- If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- To the extent possible, do not allow weed escapes to produce seeds, roots, or tubers.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weeds in the field.
- Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program.
- Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.

## TANK MIX DIRECTIONS FOR NONCROP USES

Tank mixes of DERRINGER Herbicide plus one or more appropriate residual herbicide(s) listed on this label may be needed to control vegetation emerging from underground reproductive parts or seeds, as well as vegetative growth



from previously treated plants. DERRINGER Herbicide is compatible in tank mixes with many other herbicides; however, test for compatibility prior to tank mixing with tank mix partners other than those listed on this label. Use as directed on the labeling of the tank mix partner.

A tank mix application of DERRINGER Herbicide plus one or more of the following herbicides is recommended for broad-spectrum postemergence and preemergence vegetation control.

Arsenal® Powerline Herbicide	Method® 240 SL Herbicide
Esplanade® 200 SC	Streamline® Herbicide
Perspective® Herbicide	
Viewpoint® Herbicide	

### Compatibility Testing with Tank Mix Partners

A compatibility test must be conducted with any potential tank mix partner with DERRINGER Herbicide, except with any one of those listed above. Using a clear glass quart jar, conduct the test as described below:

1. Fill the jar three-quarters full of water
2. Add the appropriate amount of herbicide in the following order: (a) dry flowable, (b) wettable powder, (c) aqueous suspensions, (d) flowables, (e) liquids and (f) solutions and emulsifiable or liquid concentrates. Shake or gently stir jar after each addition to thoroughly mix.
3. After adding all ingredients, let the mixture stand for 15 minutes and then look for separation, large flakes, precipitates, gels, and heavy oily film on the jar or other signs of incompatibility.
4. If the compatibility test shows signs of incompatibility, do not tank mix the product tested with DERRINGER Herbicide.

### Use of Spray Adjuvants

The addition of a nonionic antifoaming agent may reduce foaming, especially when using soft water. The use of Methylated seed oil (MSO) at 1% v/v (1 gallon per 100 gallons of spray solution) or non-ionic surfactant (NIS) at a minimum rate of 0.25% v/v (1 quart per 100 gallons of spray solution) may be used for foliar applications.

The addition of 8.5 to 17 pounds of ammonium sulfate (spray grade) per 100 gallons of water (1 to 2% by weight) or 2 to 4 pounds of ammonium sulfate per acre may result in better weed control.

### Broadleaf and Grass Weeds Controlled by DERRINGER Herbicide

For postemergence control of the weeds listed in the table below, apply DERRINGER Herbicide at the recommended rates for broadcast or spot applications based on weed size and stage of growth.

**Table 2.** Rates for postemergence weed control

Weed Size and Stage	Broadcast DERRINGER Herbicide Rate Per Acre (Quarts)	Spot Spray DERRINGER Herbicide (% Solution)
Weeds < 3" in height	2 to 3	1 to 1.5
Weeds < 6" in height, pre-tiller grasses	3 to 4	1.5 to 2.5
Weeds > 6" in height and/or grasses that have tillered	4 to 6	2.5 to 3

### Broadleaf Weeds

Bindweed	Heath aster, white	Nightshade	Thistle, musk
Buffalobur	Henbit	Pennycress	Velvetleaf
Burdock	Horsetail	Pigweed, red root	Vervain
Canada thistle	Jimsonweed	Plantain	Virginia copperleaf
Chickweed	Kochia	Pokeweed	Wild buckwheat
Clover	Lambsquarters	Prickly lettuce	Wild mustard
Cocklebur, common	Leafy spurge	Purslane	Wild onion
Dock, curly	London rocket	Ragweed	Wild turnip
Dandelion	Malva (little mallow)	Rocket, yellow	Woodsorrel
Dogbane, hemp	Marestail	Russian thistle	
Filaree	Mugwort	Shepherdspurse	

Fleabane, annual	Mullein	Smartweed
Goldenrod	Nettle	Sowthistle, annual

### Grasses and Sedges

Annual bluegrass	Fall panicum	Nutsedge	Wheat, volunteer
Bahiagrass	Fescue	Paragrass	Wild oat
Barley	Foxtail, giant	Quackgrass	Windgrass
Barnyardgrass	Foxtail, green	Ryegrass	
Bromegrass, downy	Foxtail, yellow	Sandbur	
Bromegrass, smooth	Goosegrass	Shattercane	
Carpetgrass	Guineagrass	Sprangletop	
Crabgrass	Johnsongrass, seedling	Stinkgrass	
Cupgrass	Kentucky bluegrass	Torpedograss	
Dallisgrass	Lovegrass	Vaseygrass	

### Brush Control Use Directions

DERRINGER Herbicide will provide control or suppression of the perennial woody species (brush) listed below. Use DERRINGER Herbicide at rates from 2 to 6 quarts per acre (0.5 to 1.5 lbs a.i./A) to impact the growth of woody plants and not to exceed 6 quarts per acre (1.5 lbs a.i./A) per year. Non-ionic surfactants (NIS) or methylated seed oils (MSO) may be used when making foliar applications. Follow any special instructions on the surfactant manufacturer's label.

For hard-to control woody plants such as elm, certain oaks or when plant leaf surfaces have hardened off, use the higher rate of DERRINGER Herbicide or tank mix DERRINGER Herbicide with other herbicides registered for control of these woody plants. High recommended rates per acre of this product should be used when conditions are not optimum for spray coverage, such as when weed growth is heavy or dense. Lower recommended rates should be used when the target species is conifer and when vegetation growth conditions allow for uniform spray coverage.

### Foliar Treatments with Ground Equipment

#### High Volume Applications

Use high volume applications for optimum performance when spraying medium to high density vegetation. Use equipment calibrated to deliver 50 to 100 gallons of finished spray per acre. Do not apply more than 6 quarts of DERRINGER Herbicides per acre (1.5 lbs a.i./A). For best results, make sure that the targeted plant foliage is thoroughly covered.

#### Low Volume Applications

Use low volume applications when brush height is less than 6 feet and brush cover is less than 60% of the area. Use equipment calibrated to deliver 10 to 50 gallons of finished spray per acre. Do not apply more than 6 quarts of DERRINGER Herbicide per acre (1.5 lbs a.i./A).

### Broadcast Applications with Ground Equipment

Use equipment calibrated to deliver 20 - 100 gallons of finished spray per acre. The amount of spray solution to use will depend on the height and density of the brush. Use spray nozzles and equipment that will provide thorough coverage of the targeted brush species.

**Brush\* Suppressed or Controlled by DERRINGER Herbicide**

blackberry  
deer brush  
Douglas fir  
gallberry  
hazel  
honeysuckle  
huckleberry  
maple  
multiflora rose  
oak  
pine  
poison ivy  
poison oak  
roundleaf greenbriar  
salmonberry  
sweetgum  
sumac  
thimbleberry  
trumpet creeper  
vine maple  
Western red cedar

**\*Not for use on brush in California**

## STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store product in original container only. Store in cool, dry place.

**Pesticide Disposal:** Waste resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Handling:** Refer to the Net Contents section of this product's labeling for the applicable "Nonrefillable Container" designation.

**Rigid, Non-refillable containers small enough to shake (i.e., with capacities equal to or less 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 and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full of 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 incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

**Rigid Non-refillable containers that are too large to shake (i.e., with capacities greater than 5 gallons or 50 pounds)**

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 of 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. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or by incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

Refer to Bottom Discharge IBC or Top Discharge IBC, Drums, Kegs information as follows.

**Bottom Discharge IBC (e.g. – Schuetz Caged IBC or Snyder Square Stackable)**

Pressure rinsing the container before final disposal is the responsibility of the person disposing of the container. To pressure rinse the container before final disposal, empty the remaining contents from the IBC into application equipment or mix tank. Raise the bottom of the IBC by 1.5 inches on the side which is opposite of the bottom discharge valve to promote more complete product removal. Completely remove the top lid of the IBC. Use water pressurized to at least 40 PSI to rinse all interior portions. Continuously pump or drain rinsate into application equipment or rinsate collection system while pressure rinsing. Continue pressure rinsing for 2 minutes or until rinsate becomes clear. Replace the lid and close bottom valve.

Once container is rinsed, offer for recycling if available or puncture and dispose of in a sanitary landfill or by incineration.

**Top Discharge IBC, Drums, Kegs (e.g.– Snyder 120 Next Gen, Bonar B120, Drums, Kegs)**

Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. To triple rinse the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container at least 10 percent full of water. Agitate vigorously or recirculate water with the pump for 2 minutes. Rinse all interior surfaces. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this procedure two more times.

Once container is rinsed, offer for recycling if available or puncture and dispose of in a sanitary landfill or by incineration.

Do not transport if container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire, or other emergency, contact CHEMTRAC at 1-800-424-9300 or BASF CORPORATION at 1-800-832-HELP (4357) day or night.

## CONDITIONS OF SALE AND WARRANTY

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

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BASF Corporation  
26 Davis Drive  
Research Triangle Park, NC 27709



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