

228-391

08/25/2009

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Ms. Lizbeth Rea  
Product Registration  
Nufarm Americas, Inc.,  
150 Harvester Drive, Suite 200  
Burr Ridge, IL 60527

AUG 25 2009

SUBJECT: Application for Pesticide Notification (PRN 98-10)  
Request Primary Brand Name "Patriot Selective Herbicide"  
EPA Reg. No. 228-391  
Application Dated July 29, 2009

Dear Registrant:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 07/29/09 for the above product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action(s) requested fall within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions, please call me directly at 703-305-6249 or Owen F. Beeder of my staff at 703-308-8899.

Sincerely,

A handwritten signature in black ink, appearing to be "Linda Arrington".

Linda Arrington  
Notifications & Minor Formulations Team Leader  
Registration Division (7505P)  
Office of Pesticide Programs

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United States  
Environmental Protection Agency  
Washington, DC 20460

|                                     |              |
|-------------------------------------|--------------|
| <input type="checkbox"/>            | Registration |
| <input type="checkbox"/>            | Amendment    |
| <input checked="" type="checkbox"/> | Other        |

OPP Identifier Number

### Application for Pesticide - Section I

|  |  |  |
|--|--|--|
| 1. Company/Product Number<br>228-391   | 2. EPA Product Manager<br>Jim Tompkins   | 3. Proposed Classification<br><input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted |
| 4. Company/Product (Name)<br>Patriot   | PM#<br>25  |  |
| 5. Name and Address of Applicant (Include ZIP Code)<br>Nufarm Americas, Inc.<br>150 Harvester Drive Suite 200<br>Burr Ridge, IL 60527<br><br><input type="checkbox"/> Check if this is a new address | 6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to:<br><b>EPA Reg. No. _____ NOTIFICATION</b><br><b>Product Name _____ AUG 25 2009</b> |  |

### Section - II

|  |  |
|--|--|
| <input type="checkbox"/> Amendment - Explain below.                            | <input type="checkbox"/> Final printed labels in response to Agency letter dated _____ |
| <input type="checkbox"/> Resubmission in response to Agency letter dated _____ | <input type="checkbox"/> "Me Too" Application.   |
| <input checked="" type="checkbox"/> Notification - Explain below.              | <input type="checkbox"/> Other - Explain below.  |

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)  
 Notification of a primary brand name change (Patriot Selective Herbicide) per PRN 98-10. This notification is consistent with the provisions of PRN 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PRN 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 FIFRA.

### Section - III

|  |  |   |   |
|--|--|---|---|
| 1. Material This Product Will Be Packaged In:  |  |   |   |
| Child-Resistant Packaging<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No  | Unit Packaging<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No | Water Soluble Packaging<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No | 2. Type of Container<br><input type="checkbox"/> Metal<br><input checked="" type="checkbox"/> Plastic<br><input type="checkbox"/> Glass<br><input type="checkbox"/> Paper<br><input type="checkbox"/> Other (Specify) _____ |
| * Certification must be submitted  |  | If "Yes" Unit Packaging wgt. No. per container  | If "Yes" Package wgt No. per container  |
| 3. Location of Net Contents Information<br><input checked="" type="checkbox"/> Label <input type="checkbox"/> Container  |  | 4. Size(s) Retail Container<br>8 x 16 oz.   | 5. Location of Label Directions<br><input checked="" type="checkbox"/> On Label<br><input type="checkbox"/> On Labeling accompanying product  |
| 6. Manner in Which Label is Affixed to Product<br><input checked="" type="checkbox"/> Lithograph<br><input type="checkbox"/> Paper glued<br><input type="checkbox"/> Stenciled |  | <input type="checkbox"/> Other _____  |   |

### Section - IV

|  |                                |   |
|--|--------------------------------|---|
| 1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)  |                                |   |
| Name<br>Lizbeth Rea  | Title<br>Regulatory Manager    | Telephone No. (Include Area Code)<br>919/655-0701 |
| <b>Certification</b><br>I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. |                                | 6. Date Application Received (Stamped)            |
| 2. Signature<br>   | 3. Title<br>Regulatory Manager |   |
| 4. Typed Name<br>Lizbeth Rea   | 5. Date<br>7/29/2009           |   |



### Patriot Selective Herbicide

|  |                  |
|--|------------------|
| <b>ACTIVE INGREDIENT:</b>  | <b>By Weight</b> |
| Metsulfuron methyl: Methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]- |                  |
| carbonyl]amino]sulfonyl]benzoate .....   | 60.0%            |
| <b>OTHER INGREDIENTS:</b> .....  | 40.0%            |
| <b>TOTAL:</b> .....  | 100.0%           |

#### KEEP OUT OF REACH OF CHILDREN CAUTION

| FIRST AID   |   |
|---|---|
| <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 15-20 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 15-20 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> |
| HOT LINE NUMBER   |   |
| Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information. |   |

**See inside label booklet for additional PRECAUTIONARY STATEMENTS**

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

Causes eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing dust or spray mist.

#### PERSONAL PROTECTIVE EQUIPMENT

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks

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.

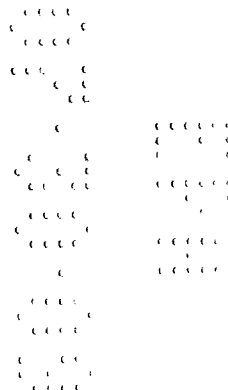
**EPA Reg. No. 228-391**

**EPA Est. No.**

Manufactured for:  
Nufarm Americas, Inc.  
150 Harvester Drive, Suite 200  
Burr Ridge, IL 60527

**Net Weight:**

000228-000391.20090729.EPA.PBN.Notification



**USER SAFETY RECOMMENDATIONS**

**Users Should:**

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

**Engineering Control Statements:**

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 (40CFR 170.240 (d) (4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in a emergency, such as a spill or equipment break-down.

**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 apply where runoff water may flow, during periods of intense rainfall or to water saturated soils as off-target movement and injury may occur. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

This herbicide is injurious to plants at extremely low concentrations. Nontarget plants may be adversely affected from drift and run-off.

**IMPORTANT**

**DO NOT USE ON FOOD OR FEED CROPS EXCEPT AS SPECIFIED BY THIS LABEL.** Injury to or loss of desirable trees or other plants may result if the precautions listed below are not followed.

- Do not apply this product (except as directed), or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend or in locations where the product may be washed or moved into contact with their roots.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas except as specified by this label.
- Prevent drift of spray to desirable plants.
- Do not contaminate any body of water, including irrigation water.
- Keep from contact with fertilizers, insecticides, fungicides and seeds.

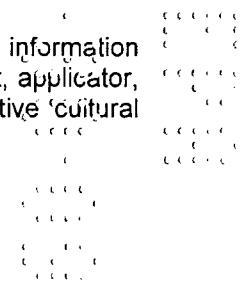
Spraying and mixing equipment used with this product must not be used for subsequent applications to food or feed crops with the exception of pastures, rangeland and wheat, as low rates of this product can kill or severely injure most food or feed crops.

**RESISTANCE**

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. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistance weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide guidance available in your area.



**INTEGRATED PEST MANAGEMENT**

This product may be used as a part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. 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 in your State responsible for pesticide regulation.

This product should be used only in accordance with the instructions on this label.

Nufarm will not be responsible for losses or damages resulting from the use of this product in any manner not specified by Nufarm. User assumes all risks associated with such uses not on this label.

Do not apply more than 4 ounces of this product per acre per year.

Do not use on food or feed crops except as specified by this label.

**TANK MIXES**

This product may be tank mixed with other herbicides registered for the use sites described in this label. Use only those tank mix partners which are labeled for the appropriate use site. When tank mixing, use the most restrictive label limitations for each of the products being used in the tank mix.

**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 interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**DO NOT ENTER OR ALLOW WORKER ENTRY INTO TREATED AREAS DURING THE RESTRICTED-ENTRY INTERVAL (REI) OF 4 HOURS.**

PPE required for early entry 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
- Shoes plus socks

**NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard 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.

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

**Non-crop industrial weed control, selective weed control in turf (industrial, unimproved only), and weed control in pastures and rangeland are not within the scope of the Worker Protection Standard.**

**GENERAL INFORMATION**

This product is a dispersible granule that is mixed in water and applied as a spray. This product controls many annual and perennial weeds and woody plants in non-crop areas, conifer and hardwood plantations. This product may also be used on pastures, or CRP as well as selected uncultivated

agricultural areas (fence rows, farmyards, and rights-of-way) directly adjacent to treated pastures or rangeland, where grazing or harvesting for animal feed may occur.

This product may be used for general weed and brush control and for the control of certain noxious weeds on noncrop sites, ditchbanks of dry drainage ditches and for selective weed control in certain types of unimproved turfgrass. Do not use on irrigation ditches. This product can also be used for controlling and suppressing undesirable weeds and hardwoods in conifer plantations and weeds in hardwood plantations.

This product controls weeds and woody plants primarily by postemergent activity. Although this product has preemergence activity, best results are generally obtained when this product is applied to foliage after emergence or dormancy break. Generally, for the control of annual weeds, this product provides best results when applied to young, actively growing weeds. For the control of perennial weeds, applications made at the bud/bloom stage or while the target weeds are in the fall rosette stage may provide the best results. The use rate depends upon the weed species and size at the time of application.

The degree and duration of control may depend on the following:

- Weed spectrum and infestation intensity
- Weed size at application
- Environmental conditions at and following treatment
- Soil pH, soil moisture, and soil organic matter.

This product may be applied on conifer and hardwood plantations and noncrop sites that contain areas of temporary surface water caused by the collection of water between planting beds, in equipment ruts, or in other depressions created by management activities. It is permissible to treat intermittently flooded low lying sites when no water is present. It is also permissible to treat marshes, swamps, and bogs after water has receded as well as seasonally dry food deltas. Do not make applications to natural or man-made bodies of water such as lakes, reservoirs, ponds, streams and canals.

**IMPORTANT INFORMATION**  
**PESTICIDE HANDLING**

- Calibrate sprayers only with clean water away from the well site.
- Make scheduled checks of spray equipment.
- Assure accurate measurement of pesticides by all operation employees.
- Mix only enough product for the job at hand.
- Avoid overfilling of spray tank.
- Do not discharge excess material on the soil at a single spot in the field or mixing/loading station.
- Dilute and agitate excess solution and apply at labeled rates/uses.
- Avoid storage of pesticides near well sites.
- When triple rinsing the pesticide container, be sure to add the rinsate to the spray mix.

**ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY**

This product is absorbed primarily through the foliage of plants, and by the roots to a lesser degree. Plant cell division is generally inhibited in sensitive plants within a few hours following uptake. Two to 4 weeks after application, leaf growth slows followed by discoloration and tissue death. The final effects on annual weeds are evident about 4 to 6 weeks after application. The ultimate effect on perennial weeds on woody plants occurs in the growing season following application.

Warm, moist conditions following treatment promote the activity of this product while cold dry conditions may reduce or delay activity. Weeds and brush hardened off by cold weather or drought stress may not be controlled.

One to two inches of rainfall or sprinkler irrigation (enough to wet the top 2-3 inches of soil profile) may be needed to move this product into the weed root zone before the next flush of weeds emerge. The amount

of moisture required for sufficient activation increases with crop or weed residue and for finer textured soils. Without sufficient rainfall or sprinkler irrigation to move this product into the weed root zone, weeds that germinate after treatment will not be controlled.

Application of this product provides the best control in vigorously growing grasses that shade competitive weeds. Weed control in areas of thin grass may not be as satisfactory. However, a grass canopy that is too dense at application can intercept a spray and reduce weed control.

This product is safe to grasses under normal conditions. However, grasses that are stressed from adverse environmental conditions (such as extreme temperatures or moisture), abnormal soil conditions, or cultural practices may be injured by applications of this product. In addition, different species of grass may be sensitive to treatment with this product under otherwise normal conditions. Application of this product to these species may result in injury.

The use of a surfactant can enhance the control of susceptible plants, except where noted. Apply at a minimum rate (concentration) of ¼% volume/volume (1 quart per 100 gallons of spray solution) or at the manufacturer's specified rate. Use only EPA approved surfactants containing at least 80% active ingredient. Certain types of surfactants, such as those incorporating acetic acid (i.e. LI-700), may not be compatible with this product and may result in decreased performance. Certain surfactants may not be suitable for use on desirable plants such as turf and conifers, listed on this label. Consult the surfactant manufacturer's label for appropriate uses.

Weed and brush control may be reduced if rainfall, snowfall or sprinkler irrigation occurs within 4 hours following application.

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### AGRICULTURAL USES

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#### CONIFER PLANTATIONS

##### Application Information

This product controls many species of weeds and deciduous trees on sites where conifers are growing or are to be planted. Apply by ground equipment or by air (helicopter only). Refer to the "Weeds Controlled" and "Brush Species Controlled" for a listing of susceptible species.

##### Application Timing

Apply this product after weeds have emerged or after undesirable hardwoods have broken winter dormancy and have reached the point of full leaf expansion.

##### Conifer Site Preparation

###### -- Application Before Transplanting

After consulting the "Weeds Controlled" and "Brush Species Controlled" tables, apply the rates of this product specified for the most difficult to control species on the site.

**Southeast-** Apply up to 4 ounces per acre for loblolly and slash pines. Transplant the following planting season.

**Northeast and Lake states-** Apply up to 2 ounces per acre for red pine. Transplant the following planting season. Apply up to 2 ounces per acre for black, white and Norway spruce. Transplant the following spring.

**West-** Apply up to 2 ounces per acre prior to planting Douglas Fir, Sitka Spruce, Western Red Cedar, Western Hemlock, Ponderosa Pine, and Grand Fir in the Coast Rangeland and western slope of the Cascades in Oregon and Washington. These conifer species listed can be planted anytime after application. Other conifer species can be planted providing the user has prior experience indicating acceptable tolerance to this product soil residues.



Without prior experience, plant other species on a small scale to determine selectivity before large-scale plantings are made as unacceptable injury may occur. Nufarm will not assume responsibility for injury to any conifer species not listed on this label.

**TANK MIX COMBINATIONS**

For broader spectrum control, the following products are to be used in combination with this product.

**Razor® Herbicide**

Tank mix 1 to 2 ounces of this product with 10 to 24 fluid ounces of Razor per acre. Refer to the product container for a list of species controlled.

**Nufarm Polaris® AC Herbicide Applicator's Concentrate**

Tank mix 1 to 2 ounces of this product with 10 to 24 fluid ounces of Nufarm Polaris® AC Applicator's Concentrate per acre. Loblolly and slash pines may be transplanted the planting season following the application. This combination controls, ash, black gum, cherry, hawthorn, honeysuckle, hophornbeam, persimmon, oaks (red, white and water), sassafras, sweetgum, Vaccinium species, and suppresses blackberry, dogwood, elms, myrtle dahoon, hickories, and red maple.

**Razor + Nufarm Polaris® AC Herbicide Applicators Concentrate**

Tank mix ½ to 1 ounce of this product with 16 to 64 fluid ounces of Razor and 10 to 12 fluid ounces of Nufarm Polaris AC Applicator's Concentrate per acre. Slash and loblolly pines may be transplanted the planting season following application. This combinations controls, cherry, dogwood, elms, oaks (red and water), persimmon, sassafras, sweetgum and suppresses hickory.

**VELPAR® L or VELPAR® DF**

Tank mix 1 to 2 ounces of this product per acre with VELPAR® L or VELPAR® DF at the rates specified on the container for various soil textures. Loblolly and slash pines may be transplanted the planting season following application. Refer to the product container for a list of species controlled.

**OUST® EXTRA**

Tank mix ½ to 1 ½ ounces of this product with 2 to 3 ounces of OUST® EXTRA per acre for herbaceous weed control. Refer to the product container and the "Weeds Controlled" section of this label for a listing of the weeds controlled. Loblolly and slash pines may be transplanted the planting season following application. Tank mix 2 ounces of this product with 3 ounces of OUST® EXTRA per acre for herbaceous weed control and early spring suppression of bull thistle and Canada thistle in the Coast Rangeland and western slope of the Cascade Mountains. Douglas fir may be transplanted at least 90 days following application.

**RELEASE—HARDWOOD CONTROL AND SUPPRESSION**

Apply this product over the top of established slash and loblolly pine to control the species listed in "Weeds Controlled" and "Brush Species Controlled" section of this label. Apply 1 to 4 ounces per acre to control the species indicated, including kudzu.

**Tank Mix Combinations--**

For broader spectrum control, apply a combination of this product with the following products.

**Nufarm Polaris® AC Herbicide Applicator's Concentrate**

Tank mix 1 to 2 ounces of this product with 8 to 16 fluid ounces of Nufarm Polaris® AC Herbicide Applicator's Concentrate per acre for application to loblolly pine. Refer to the Nufarm Polaris® AC Herbicide Applicator's Concentrate label regarding the use of surfactants and the appropriate application timing with respect to the age and development stage of the pines. This combination controls ash, black gum, cherry, hawthorn, honeysuckle, hophornbeam, oaks (red, white and water), sassafras, sweetgum, Vaccinium species and suppresses blackberry, dogwood, elms, myrtle dahoon, hickories, persimmon, and red maple.

**VELPAR® L or VELPAR® DF**

Tank mix 1 to 2 ounces of this product with VELPAR® L or VELPAR® DF at the rates specified on the container for various soil textures. This combination may be applied to loblolly and slash pines.

#### **RELEASE—HERBACEOUS WEED CONTROL**

This product may be applied to transplanted loblolly and slash pine for the control of herbaceous competition. Consult the "Weeds Controlled" for a listing of the susceptible species and specified application rates. Best results are obtained when this product is applied just before weed emergence until shortly after weed emergence.

#### **Tank Mix Combinations-**

For broader spectrum control the following products are to be used in combination with this product.

#### **Nufarm Polaris® AC Herbicide Applicators Concentrate**

Tank mix ½ to 1 ounce of this product with 4 fluid ounces of Nufarm Polaris® AC Applicators Concentrate per acre. The tank mix may be used on loblolly pine.

#### **Spyder®**

Tank mix ½ to 1 ½ ounces of this product with 2 to 3 ounces of Spyder per acre. Best results are obtained when this product is applied just before weed emergence until shortly after weed emergence. This tank mix may be used on loblolly and slash pine.

#### **VELPAR® L or VELPAR® DF**

Tank mix ½ to 1 ounce of this product with VELPAR® L or VELPAR® DF at the rates specified on the container for various soil textures. This combination may be applied to loblolly and slash pines.

#### **IMPORTANT PRECAUTIONS**

##### **--CONIFER PLANTATIONS ONLY**

- Applications of this product made to conifers that are suffering from loss of vigor caused by insects, disease, drought, winter damage, animal damage, excessive soil moisture, planting shock or other stresses may injure or kill the trees.
- Applications of this product made for herbaceous release should only be made after adequate rainfall has closed the planting slit and settled the soil around the roots following transplanting.
- Do not apply this product to conifers grown as ornamentals.
- Applications of this product may result in damage and mortality to other species of conifers when they are present on sites with those listed in the preceding section for conifer plantations.

#### **HARDWOOD PLANTATIONS**

##### **Application Information**

Apply this product at rates of up to 2 ounces per acre for the control of many weed species on sites where yellow poplar is growing or is to be planted, and on sites where red alder is to be planted. Apply by ground equipment or by air (helicopter only). Refer to the "Weeds Controlled" section of this label for a listing of susceptible species.

##### **Application Timing**

This product may be applied as a site preparation treatment prior to planting red alder or yellow poplar. As a prior to planting site preparation treatment for red alder, this product may be tank mixed with other herbicides labeled for this use.

This product may also be applied over-the-top of planted yellow poplar seedlings after the soil has settled around the root system, but before the seedlings have broken dormancy (prior to bud break).

#### **Release—Herbaceous Weed Control**

This product may be applied to yellow poplar for the control of herbaceous competition. Consult the "Weeds Controlled" for a listing of the susceptible species and specified application rates. Best results are obtained when this product is applied just before weed emergence until shortly after weed emergence.

**Tank Mix Combinations-**

Tank mix 1/2 ounce of this product with 4 to 6 pints of VELPAR® L as specified on the package label for "RELEASE – HERBACEOUSE WEED CONTROL" in pine plantations in the eastern U.S. Follow the VELPAR® L label instructions regarding altering the application rate by soil texture.

**IMPORTANT PRECAUTIONS**

**-- HARDWOOD PLANTATIONS ONLY**

- Application of VELPAR® L and this product made to yellow poplar that are suffering from loss of vigor caused by insects, disease, drought, winter damage, animal damage, excessive soil moisture, planting shock or other stresses may injure or kill the seedlings.
- Applications of this product made for release should only be made after adequate rainfall has closed the planting slit and settled the soil around the roots following transplanting.
- Do not use a surfactant for applications made over the tops of trees.
- Careful consideration must be given by an experienced and knowledgeable forester to match the requirements of yellow poplar and/or red alder to conditions of the site. Treatment of yellow poplar and/or red alder planted on a site inadequate to meet its requirements may injure or kill the seedlings.

**PASTURE, RANGELAND AND CONSERVATION RESERVE PROGRAM (CRP)**

**APPLICATION INFORMATION FOR GRASS ESTABLISHMENT IN PASTURE, RANGELAND AND CONSERVATION RESERVE PROGRAM (CRP)**

Use this product for the suppression or control of broadleaf weeds to aid in the establishment of the following perennial native or improved grasses planted in pasture, rangeland or acres enrolled in the Conservation Reserve Program (CRP):

- Blue grama
- Bluestems – big, little, plains, sand, WW spar
- Buffalograss
- Green sprangletop
- Indiangrass
- Kleingrass
- Lovegrasses – atherstone, sand, weeping, wilman
- Orchardgrass
- Sideoats grama
- Switchgrass – Blackwell
- Wheatgrasses – bluebunch, crested, intermediate, pubescent, Siberian, slender, streambank, tall, thickspike, western
- Wildrye grass – Russian

Consult with the Natural Resources and Conservation Service or other local experts concerning planting techniques and other cultural practices to maximize potential for grass establishment.

Due to the inability of newly planted grass stands to sufficiently compete with weeds, and the severity of weed pressure in new grass stands, performance from this product may not always be satisfactory. An additional herbicide application or mowing may be needed.

**Use Rates and Application Timing for Grass Establishment in Pasture, Rangeland and CRP**

**Preplant (prior to planting) or Preemergence (after planting but before grass emergence)**

Apply this product preplant or preemergence at 1/10 ounce/acre on all labeled grasses except orchardgrass and Russian wildrye grass. Do not apply this product preplant or preemergence to orchardgrass and Russian wildrye grass as severe crop injury may result.

**Early Postemergence to New Plantings**

Apply this product at 1/10 ounce/acre, plus a non-ionic surfactant at the rate of 2 to 4 pints/100 gallons of spray solution on all labeled grasses anytime after grass emergence. Do not use a spray adjuvant other than non-ionic surfactant.

Because grass species differ in time of emergence, apply only after majority of grasses are in the 3 to 4 leaf stage.

**Postemergence to stands with 1-5 leaf grasses planted the previous season**

Apply this product at 1/10 ounce/acre plus a non-ionic surfactant at the rate of 2 to 4 pints/100 gallons of spray solution, on all labeled grasses when the majority of the grasses have one or more leaves. Do not use a spray adjuvant other than non-ionic surfactant.

**APPLICATION INFORMATION FOR ESTABLISHED GRASSES IN PASTURE, RANGELAND AND CONSERVATION RESERVE PROGRAM (CRP)**

**Use Rates for Established Pastures, Rangeland and CRP**

Apply 1/10 to 1 ounce of this product per acre as a broadcast application to established grasses in pasture rangeland and CRP. For spot application, use 1 ounce per 100 gallons of water. Do not apply more than 1 2/3 ounces of this product per acre per year.

**Application Timing – Established Pastures, Rangeland and CRP**

This product may be applied to established native grasses such as bluestems and grama, and on other established pasture grasses such as bermudagrass, bluegrass, orchardgrass, bromegrass, fescue and timothy that were planted the previous growing season (or earlier) and are fully tillered, unless otherwise directed on this label. Specific application timing information on several of these grass species follows:

| Pasture Grass                           | Minimum time from grass establishment to Patriot application |
|---|--|
| Bermudagrass                            | 2 months   |
| Bluegrass, bromegrass, and orchardgrass | 6 months   |
| Timothy                                 | 12 months  |
| Fescue                                  | 24 months  |

**Fescue Precautions:**

Note that this product may temporarily stunt fescue, cause yellowing or seed suppression. To minimize these symptoms, take the following precautions:

- Do not use more than 4/10 oz./A of this product
- Tank mix this product with Weedestroy® AM-40 Amine Salt and other 2,4-D products.
- Use the lowest specified rate for target weeds
- Use a non-ionic surfactant at ½ to 1 pint per 100 gallons of spray solution (1/16 to 1/8% v/v)
- Make application later in the spring after the new growth is 5 to 6 inches tall, or in the fall
- Do not use surfactant when liquid nitrogen is used as a carrier
- Do not use a spray adjuvant other than non-ionic surfactant

The first cutting yields may be reduced due to seedhead suppression resulting from treatment with this product.

**Timothy Precautions:**

Timothy should be at least 6" tall at application and be actively growing. Applications of this product to timothy under any other conditions may cause crop yellowing and/or stunting. To minimize these symptoms, take the following precautions:

- Do not use more than 4/10 oz./A of this product
- Tank mix this product with Weedestroy AM-40 Amine Salt and other 2,4-D products.
- Use the lowest specified rate for target weeds
- Use a non-ionic surfactant at ½ pint per 100 gallons

- Make application in the late summer or fall
- Do not use surfactant when liquid nitrogen is used as a carrier
- Do not use a spray adjuvant other than non-ionic surfactant

**Application of Patriot to Pensacola bahiagrass, ryegrass (Italian or perennial) and Garrison's creeping foxtail may cause severe injury to and /or loss of pastures.**

**Other Pasture and Rangeland Grasses:** Varieties and species of forage grasses differ in their tolerance to herbicides. When using this product on a particular grass for the first time, limit use to a small area. If no injury occurs throughout the season, larger acreage may be treated the following season. Broadleaf pasture species such as alfalfa and clover are highly sensitive to this product and will be severely stunted or injured by this product.

### **WEEDS AND BRUSH CONTROLLED OR SUPPRESSED IN PASTURES, RANGELAND AND CONSERVATION RESERVE PROGRAM (CRP)**

Unless otherwise directed, treat when weeds are less than 4" tall or in diameter and are actively growing.

Before using this product, carefully consider your crop rotation plans and options. For rotational flexibility, do not treat all of your pasture, rangeland or CRP acres at the same time.

#### **1/10 OUNCE PER ACRE**

|                                  |                                    |
|----------------------------------|------------------------------------|
| Bitter sneezeweed                | Marestail                          |
| Blue/purple mustard*             | Mayweed chamomile                  |
| Broomweed, common                | Miners lettuce                     |
| Bur buttercup (testiculate)      | Pigweed (redroot, smooth, tumble)  |
| Buttercup                        | Plains coreopsis                   |
| Canada thistle*‡                 | Plantain                           |
| Carolina geranium                | Prickly lettuce*                   |
| Coast fiddleneck (tarweed)       | Prostrate knotweed*‡               |
| Common chickweed                 | Russian thistle*                   |
| Common mullein                   | Shepherd's purse                   |
| Common Purslane                  | Smallseed falseflax                |
| Conical catchfly                 | Smartweed (green, ladythumb, pale) |
| Corn gromwell*‡                  | Snow speedwell                     |
| Cowcockle                        | Tansymustard*                      |
| Curly dock                       | Treacle mustard (Bushy Wallflower) |
| Cutleaf evening primrose*‡       | Tumble/Jim Hill mustard            |
| Dandelion                        | Volunteer sunflower*               |
| False chamomile                  | Waterpod                           |
| Field pennycress (fanweed)       | Wild buckwheat*‡                   |
| Filaree                          | Wild garlic*                       |
| Flixweed*                        | Wild mustard                       |
| Groundsel (common)               | Wild sunflower*‡                   |
| Henbit                           | Woolly croton*                     |
| Kochia*                          |                                    |
| Lambsquarters (common, slimleaf) |                                    |

**2/10 OUNCE PER ACRE**

Annual marshelder  
Blackeyed-Susan  
Buckbrush‡  
Burclover  
Common yarrow  
Dogfennel

Horsemint (beebalm)  
Musk thistle\*  
Purple scabious  
Scotch thistle\*  
Western snowberry‡  
Wild carrot

**3/10 to 1/2 OUNCE PER ACRE**

Annual sowthistle  
Aster  
Bittercress  
Chicory  
Clover  
Cocklebur  
Corn cockle  
Crown vetch  
Goldenrod  
Maximillion sunflower  
Multiflora rose\*‡  
Pennsylvania smartweed

Pensacola bahiagrass\*  
Redstem filaree  
Rough fleabane  
Seaside arrowgrass  
Sericea lespedeza\*  
Silky crazywood (locoweed)  
Sweet clover  
Wild lettuce  
Wood sorrel  
Yankee weed

**1/2 to 1 OUNCE PER ACRE**

Black henbane  
Blackberry  
Broom snakeweed  
Buckhorn plantain  
Common crupina  
Dewberry  
Dyer's woad  
Gorse  
Halogeton

Honeysuckle  
Multiflora rose and other wild roses\*  
Plumeless thistle  
Roserling gaillardia  
Spotted knapweed\*  
Teasel  
Wild caraway  
Yucca\*‡

**1 OUNCE PER ACRE**

Bull thistle  
Common tansy  
Field bindweed‡  
Gumweed  
Houndstongue  
Perennial Pepperweed  
Poison hemlock  
Purple loosestrife

Rush skeletonweed\*‡  
Salsify  
Scouringrush  
Snowberry  
St. Johnswort  
Western salsify  
Whitetop (hoary cress)

\*See the Specific Weed Problems section of this label.

‡Weed suppression is a reduction in weed competition (reduced population and/or vigor) as visually compared to an untreated area. The degree of suppression varies with the rate used, the size of the weeds, and the environmental conditions following treatment.

**SPOT APPLICATIONS FOR THE SUPPRESSION‡ OF WEEDS AND BRUSH**

**APPLICATION INFORMATION FOR SPOT APPLICATIONS**

Use this product for the suppression of the following undesirable weed and brush species growing in pastures, rangeland or CRP using spot applications. Spot applications may be made by using equipment such as back pack sprayers or hand sprayers. This product should be applied as a spray to the foliage and stems. The application volume required will vary with the height and density of the brush and the

application equipment used. Regardless of the application volume and equipment used, thorough coverage of the foliage and stems is necessary to optimize results. On tall, dense stands, it is often necessary to spray from both sides to obtain adequate coverage. Add a non-ionic surfactant having at least 80% active ingredient at 2-4 pints per 100 gallons of spray solution.

**Use Rates for Spot Application**

Mix 1 ounce of this product per 100 gallons of water.

**Application Timing for Spot Applications**

Make a foliar application of the specified rate of this product during the period from full leaf expansion in the spring until the development of full fall coloration.

**Weed and Brush Species Suppressed with Spot Applications**

Blackberry‡                      Dewberry‡  
Canada Thistle\*‡              Multiflora Rose‡

\*See the Specific Weed Problems section.

‡Weed and brush suppression is a reduction in weed and brush competition (reduced population and/or vigor) as visually compared to an untreated area. The degree of suppression varies with the rate used, the size of the weeds, and the environmental conditions following treatment.

**SPECIFIC WEED PROBLEMS**

Note: Thorough spray coverage of all weed species listed below is very important.

**Blue/Purple Mustard, Flixweed, and Tansymustard:** For best results, apply this product tank mixtures with Weedestroy® AM-40 Amine Salt and other 2,4-D products or MCPA postemergence to mustards, but before bloom.

**Broom Snakeweed:** For best results, apply this product at ½ ounce/acre in the fall. Applications of this product in the spring will provide suppression only.

**Canada Thistle:** For suppression with broadcast applications, apply either this product or this product plus Weedestroy® AM-40 Amine Salt and other 2,4-D products or MCPA in the spring after the majority of thistles have emerged and are small (rosette stage to 6" elongating stems) and actively growing. The application will inhibit the ability of emerged thistles to compete with grass.

For suppression with spot applications, apply as a foliar spray once plant is fully leaved.

**Corn Gromwell, Cutleaf Evening Primrose and Prostrate Knotweed:** Apply this product when weeds are actively growing, are no larger than 2" tall, and when crop canopy will allow thorough coverage. Tank mixing Weedestroy® AM-40 Amine Salt and other 2,4-D products or MCPA with this product can improve results.

**Kochia, Russian thistle, Prickly lettuce:** Naturally occurring resistant biotypes of these weeds are known to occur. For best results, use this product in a tank mix with Veteran 720 and Weedestroy® AM-40 Amine Salt and other 2,4-D products this product should be applied in the spring when kochia, Russian thistle, and prickly lettuce are less than 2" tall or 2" across and are actively growing.

**Multiflora Rose:** For control with broadcast applications, apply this product at ½ ounce per acre as a broadcast application. For control with foliar applied spot applications, apply this product at 1 ounce per 100 gallons of water.

For suppression with broadcast applications, apply this product at rates of 3/10 up to ½ ounce per acre. Applications should be made in the spring, soon after multiflora rose is fully leafed and is less than 3 feet tall.

For control with Spotgun Basal Soil Treatment, prepare a spray suspension of this product by mixing 1 ounce per gallon water. Mix vigorously until this product is dispersed and agitate periodically while applying the spray suspension. Apply the spray preparation with an exact delivery handgun applicator. Apply at the rate of 4 ml for each 2 feet of rose canopy diameter. Direct the treatment to the soil within 2

feet of the stem union. When treating large plants and more than one delivery is required, make applications on opposite sides of the plant.

Make applications from early spring to summer.

**Musk Thistle, Scotch Thistle:** Apply this product at 2/10 to 3/4 ounce per acre in the spring or early summer prior to flowering or in the fall after newly emerged plants have reached the rosette stage of growth. Certain biotypes of Musk and Scotch Thistles are less sensitive to this product and may not be controlled with this product rates less than 3/4 ounce per acre. Consult with your local Nufarm representative, dealer or applicator for specific use rate and tank mix specifications for your area. Fall applications should be made before the soil freezes.

**Pensacola bahiagrass control in established Bermudagrass pasture:** Apply this product at 3/10 ounce per acre after green-up in the spring but before bahiagrass seedhead formation. Application should be made when moisture is sufficient to enhance grass growth.

This product is very effective for removal of bahiagrass from bermudagrass pastures. In highly infested pastures, the use of this product can clear the areas of useful forage until the bermudagrass has time to cover the area. Therefore, this product treatments should be spread out over a period of years. Do not apply to an entire farm or ranch in one year. Fertilization (particularly with nitrogen and potassium) and/or replanting may accelerate the process of reestablishment of bermudagrass.

Under heavy bahiagrass pressure, grazing pressure, or adverse weather conditions (heat and drought), bahiagrass regrowth may occur.

Do not use this product for control of common or Argentine bahiagrass. Also, do not use this product in liquid fertilizer solutions for Pensacola bahiagrass control as poor control and/or regrowth may occur.

**Rush skeletonweed:** For best results, apply this product at 1 ounce per acre with 8 fluid ounces of dicamba (such as Diablo or Veteran 720) and 16 fluid ounces of 2,4-D.

**Sericea lespedeza:** For best results, apply this product at 4/10 to 1/2 ounce per acre beginning at flower bud initiation through the full bloom stage of growth. Consult with your local Nufarm representative, dealer or applicator for specific use rate specifications for your area. Do not make applications if drought conditions exist at intended time of application.

**Spotted Knapweed:** For best results, apply this product at 1/2 ounce per acre with 8 fluid ounces of dicamba (such as Diablo or Veteran 720) and 16 ounces active ingredient per acre of 2,4-D.

**Sunflower (wild or volunteer):** Apply either this product or this product plus Weedestroy® AM-40 Amine Salt and other 2,4-D products or MCPA after the majority of sunflowers have emerged, are 2" to 4" tall and are actively growing. Use spray volumes of at least 3 gallons by air or 10 gallons by ground.

**Wild Buckwheat:** For best results, apply this product plus Weedestroy® AM-40 Amine Salt and other 2,4-D products or MCPA when plants have no more than 3 true leaves (not counting cotyledons). If plants are not actively growing, delay treatment until environmental conditions favor active weed growth.

**Wild Garlic:** Apply 1/10 to 2/10 ounce per acre of this product in the early spring when wild garlic is less than 12" tall with 2" to 4" of new growth.

**Woolly Croton:** Apply 1/10 to 2/10 ounce per acre of this product in the late spring or early summer from cotyledon through 2 true leaf stage.

**Yucca:** For best results, apply this product at 1/2 to 3/4 ounce per acre plus 2,4-D, Diablo, Veteran 720, or Relegate from two weeks before blooming to two weeks after blooming.

## SPRAY ADJUVANTS

Unless otherwise directed on this label, this product applications must include either a crop oil concentrate or a nonionic surfactant. In addition, an ammonium nitrogen fertilizer can be used unless specifically prohibited by tank mix partner labeling. Consult your local Nufarm representative prior to using other adjuvant systems. If another herbicide is tank mixed with this product, select adjuvants authorized for use with both products. Products must contain only EPA exempt ingredients (40 CFR 1001).



**Petroleum Crop Oil Concentrate (COC) or Modified Seed Oil (MSO)**

- Apply at 1% v/v (1 gallon per 100 gallons spray solution) or 2% under arid conditions.
- MSO adjuvants may be used at 0.5% v/v (0.5 gallons per 100 gallons spray solution) if specifically noted on adjuvant product labeling.
- Oil adjuvants must contain at least 80% high quality, petroleum (mineral) or modified vegetable seed oil with at least 15% surfactant emulsifiers.

**Nonionic Surfactants (NIS)**

- Apply at 0.25% v/v (1 quart per 100 gallons spray solution) or 0.5% under arid conditions.
- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLD) greater than 12.

**Ammonium Nitrogen Fertilizer**

- Use 2 quarts/acre of a high-quality urea ammonium nitrate (UAN), such as 28%N or 32%N, or 2 pounds/acre of a spray grade ammonium sulfate (AMS). Use 4 quarts/acre UAN or 4 pounds/acre AMS under arid conditions.

**Special Adjuvant Types**

- Combination adjuvant products may be used at doses that provide the required amount of NIS, COC, MSO and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.
- In addition to the adjuvants specified above, other adjuvant types may be used if they provide the same functionality and have been evaluated and approved by Nufarm. Consult your local Nufarm representative before using adjuvant types not specified on this label.

**Exceptions:** (1) On Fescue pastures use ½ to 1-pint non-ionic surfactant per 100 gallons; (2) on Timothy pastures use ½ pint non-ionic surfactant per 100 gallons.

Antifoaming agents may be used if needed.

**Do not use low rates of liquid fertilizer as a substitute for surfactant.**

**GROUND APPLICATION**

To obtain optimum spray distribution and thorough coverage, use flat-fan or low-volume flood nozzles.

For flood nozzles on 30" spacings, use at least 10 gallons per acre (GPA), flood nozzles no larger than TK10 (or equivalent), and a pressure of at least 30 pounds per square inch (psi). For 40" nozzle spacings, use at least 13 GPA; for 60" spacings, use at least 20 GPA. It is essential to overlap the nozzles 100% for all spacings.

With "Raindrop RA" nozzles, use at least 30 GPA and ensure that nozzle spray patterns overlap 100%.

For flat-fan nozzles, use at least 10 GPA for broadcast applications to pasture, rangeland or CRP.

Use 50-mesh screens or larger.

**AERIAL APPLICATION**

Use nozzle types and arrangements that provide optimum spray distribution and maximum coverage. Use a minimum of 2 GPA. In Idaho, Oregon and Washington, use a minimum of 3 GPA.

When applying this product by air in areas adjacent to sensitive crops, use solid stream nozzles oriented straight back. Adjust the swath to avoid spray drift damage to sensitive crops downwind and/or use ground equipment to treat the border edge of fields. See the Spray Drift Management section of this label.

**TANK MIXTURES**

**With Insecticides and Fungicides**

This product may be tank mixed or used sequentially with insecticides and fungicides registered for use on pastures, rangeland or CRP. However, under certain conditions (drought stress or cold weather), tank mixes or sequential applications of this product with organophosphate insecticides (such as parathion) may produce temporary grass yellowing or, in severe cases, grass injury.

The potential for grass injury is greatest when wide fluctuations in day/night temperatures occur just prior to or soon after application.

Test these tank mixtures in a small area before treating large areas. Do not use this product plus Malathion, as grass injury will result.

**With Herbicides**

This product may be tank mixed with other suitable registered herbicides to control weeds listed under Weeds Suppressed, weeds resistant to this product, or weeds not listed under Weeds Controlled. Read and follow all manufacturer's label instructions for the companion herbicide. If those label instructions conflict with this label, do not tank mix the herbicide with this product.

**Herbicide Tank Mixtures for Pastures or Rangeland:**

For postemergence control of the following weeds in pastures or rangeland:

|                      |                 |
|----------------------|-----------------|
| Annual marshelder    | Common milkweed |
| Burclover            | Common ragweed  |
| Carolina horsenettle | Giant ragweed   |
| Common cocklebur     | Western ragweed |

Apply this product at 1/10 to 1 ounce per acre in a tank mix with one of the following products. Refer to companion herbicide labels to confirm that the product is labeled for control of the weeds listed above and is registered for use in your state.

| <b>Product</b> | <b>Rate (ounce product/A)</b> |
|----------------|-------------------------------|
| Trooper P+D    | 8 to 32                       |
| Trooper 22K    | 4 to 16                       |
| Weedmaster     | 8 to 32                       |
| Relegate       | 8                             |
| Amber          | 0.35*                         |

\*For suppression of Western Ragweed in Phenoxy Restricted and Herbicide Regulated counties.

| <b>Product</b>                          | <b>Rate (ounces a.i./A)</b> |
|---|-----------------------------|
| 2,4-D                                   | 8 to 16                     |
| Dicamba (such as Diablo or Veteran 720) | 2 to 16                     |
| 2,4-D + Veteran 720                     | 1 + 2.87 to 4 + 11.48       |

**Herbicide Tank Mixtures for CRP:**

**Preplant**

This product may be tank mixed with glyphosate as a pre-plant (prior to the planting of CRP grasses) treatment to control broadleaf and grassy weeds. When using a glyphosate tank mix, allow at least 7 days after application before planting grasses. Refer to glyphosate containing product fact sheets and labels for all use instructions, label rates, weed control claims, and precautions.

**Postemergence**

For best weed control performance in CRP, use this product in a tank mix with 2,4-D (ester formulations perform best) or dicamba (such as Diablo or Veteran 720).

This product can be tank mixed with 2,4-D at ¼ pound a.i./A for all labeled grasses larger than the 5-leaf stage. For fully tillered stands, up to ½ pound a.i./A of 2,4-D may be used. A spray adjuvant may be added. However, the addition of spray adjuvant may increase the chance of grass injury.

This product can also be tank mixed with dicamba (such as Diablo or Veteran 720). Use not more than 1/8 to ¼ pound a.i./A of Diablo plus Patriot after majority of grasses are in the 3-leaf stage. In established grasses (2<sup>nd</sup> year stands), use not more than ¼ to ½ pound a.i./A Diablo plus Patriot. A spray adjuvant may be added. However, the addition of spray adjuvant may increase the chance of grass injury.

#### **With Liquid Nitrogen Solution Fertilizer**

Liquid nitrogen fertilizer solutions may be used as a carrier in place of water. Run a tank mix compatibility test before mixing this product in fertilizer solution.

This product must first be slurried with water and then added to liquid nitrogen solutions (e.g., 28-0-0, 32-0-0). Ensure that the agitator is running while the this product is added. Use of this mixture may result in temporary grass yellowing and stunting.

If using low rates of liquid nitrogen fertilizer (between 5% and 50% of the spray solution volume) in the spray solution, the addition of a non-ionic surfactant is necessary. Add surfactant at ¼ pint per 100 gallons of spray solution (0.03% v/v).

Do not use a spray adjuvant other than non-ionic surfactant.

When using high rates of liquid nitrogen fertilizer (greater than or equal to 50% of the spray solution volume) in the spray solution, adding spray adjuvant(s) increases the risk of grass injury. Consult your agricultural dealer, consultant, fieldman, or Nufarm representative for specific instructions before adding an adjuvant to these tank mixtures.

If 2,4-D or MCPA is included with this product and liquid nitrogen fertilizer mixture, ester formulations tend to be more compatible (see manufacturer's label). Do not add spray adjuvants when using this product in tank mix with 2,4-D ester and liquid nitrogen fertilizer solutions greater than 5% of the spray volume.

The use of liquid nitrogen fertilizer solutions greater than 5% of the spray volume with rates of this product greater than 0.5 ounce/acre may cause grass injury.

Do not use low rates of liquid fertilizer as a substitute for spray adjuvants.

Do not use with liquid fertilizer solutions with a pH less than 3.0.

**Rotation Intervals in Pasture, Rangeland or CRP for Overseeding and Renovation**

| Location  | Crop or Grass Species   | Maximum Patriot Rate on Pasture (ounce/acre) | Minimum Rotation Interval (months) |
|---|---|--|------------------------------------|
| AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, WV                                      | Alfalfa, red clover, white clover, sweet clover, bermudagrass, bluegrass, ryegrass, tall fescue             | 1/10 to 3/10                                 | 4                                  |
|   | Wheat (except durum)  | 1/10 to 3/10                                 | 1                                  |
|   | Durum, barley, oat  | 1/10 to 3/10                                 | 10                                 |
| All states not included above   | Red clover, white clover and sweet clover   | 1/10 to 2/10                                 | 12                                 |
|   | Bermudagrass, bluegrass, ryegrass   | 1/10 to 2/10                                 | 6                                  |
|   | Tall Fescue   | 1/10 to 2/10                                 | 18                                 |
|   | Wheat (except durum)  | 1/10 to 2/10                                 | 1                                  |
| All areas with soil pH of 7.5 or less   | Russian wildrye   | 1/10 to 1/2                                  | 1                                  |
|   | Green needlegrass, switchgrass, sheep fescue  | 1/10 to 1                                    | 1                                  |
|   | Meadow brome, smooth brome, alta fescue, red fescue, meadow foxtail, orchardgrass, Russian wildrye, timothy | 1/10 to 1                                    | 2                                  |
| All areas with soil pH of 7.9 or less   | Alkali sacaton, mountain brome, blue grama, thickspike wheatgrass   | 1/10 to 1                                    | 1                                  |
|   | Sideoats grama, switchgrass   | 1/10 to 1/2                                  | 2                                  |
|   | Western wheatgrass  | 1/10 to 1                                    | 2                                  |
|   | Sideoats grama, switchgrass, big bluestem   | 1/10 to 1                                    | 3                                  |
| AL, AR, FL, GA, KS, KY, LA, MS, MO, NC, OK, SC, TN, TX, VA, WV, with soil pH of 7.0 or less | STS soybeans  | 1/10 to 2/10                                 | 6                                  |
|   | Field corn  | 1/10 to 2/10                                 | 12                                 |

**CROP ROTATION**

Before using this product, carefully consider your crop rotation plans and options. For rotational flexibility, do not treat all of your pasture, rangeland or CRP acres at the same time.

**Minimum Rotational Intervals**

Minimum rotation intervals\* are determined by the rate of breakdown of this product applied. This product is affected by soil pH, presence of soil microorganisms, soil temperature, and soil moisture. Low soil pH, high soil temperature, and high soil moisture increase this product breakdown in soil, while high soil pH, low soil temperature, and low soil moisture slow the breakdown of this product.

Of these 3 factors, only soil pH remains relatively constant. Soil temperature, and to a greater extent, soil moisture, can vary significantly from year to year and from area to area. For this reason, soil temperatures and soil moisture should be monitored regularly when considering crop rotations.

\*The minimum rotation interval represents the period of time from the last application to the anticipated date of the next planting.

**Soil pH Limitations**

Do not apply this product on soils having a pH above 7.9, as extended soil residual activity could extend crop rotation intervals beyond normal. Under certain conditions, this product could remain in the soil for

34 months or more, injuring wheat and barley. In addition, other crops planted in high-pH soils can be extremely sensitive to low concentrations of this product.

### Checking Soil pH

Before using this product, determine the soil pH of the areas of intended use. To obtain a representative pH value for the test area, take several 0" to 4" samples from different areas of the field and analyze them separately. Consult local extension publications for additional information on soil sampling procedures.

### Bioassay

A field bioassay must be completed before rotating to any crop or grass species/variety not listed in the Rotation Intervals Table, or if the soil pH is not in the specified range, or if the use rate applied is not specified in the table.

To conduct a field bioassay, grow test strips of the crop(s) or grass(es) you plan to grow the following year in fields previously treated with this product. Crop or grass response to the bioassay will indicate whether or not to rotate to the crop(s) or grass(es) grown in the test strips.

If a field bioassay is planned, check with your local Agricultural dealer or Nufarm representative for information detailing the field bioassay procedure.

### Grazing/Haying

There are no grazing or haying restrictions for this product. Coveralls, shoes plus socks must be worn if cutting within 4 hours of treatment.

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## NON-AGRICULTURAL USES

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### WEEDS CONTROLLED

#### 1/3 TO 1/2 OUNCE PER ACRE

|                    |                            |
|--------------------|----------------------------|
| Annual sowthistle  | Goldenrod                  |
| Aster              | Lambsquarters              |
| Bahiagrass         | Marestail/horseweed ****   |
| Beebalm            | Maximillion sunflower      |
| Bittercress        | Miners lettuce             |
| Bitter sneezeweed  | Pennsylvania smartweed     |
| Blackeyed-susan    | Plains coreopsis           |
| Blue mustard       | Plantain                   |
| Bur buttercup      | Redroot pigweed            |
| Chicory            | Redstem filaree            |
| Clover             | Rough fleabane             |
| Cocklebur          | Sheperd's-purse            |
| Common chickweed   | Silky crazyweed (locoweed) |
| Common groundsel   | Smallseed falseflax        |
| Common purslane    | Smooth pigweed             |
| Common yarrow      | Sweet clover               |
| Conical catchfly   | Tansymustard               |
| Corn cockle        | Treacle mustard            |
| Cow cockle         | Tumble mustard             |
| Crown vetch        | Wild carrot                |
| Dandelion          | Wild garlic                |
| Dogfennel          | Wild lettuce               |
| False chamomile    | Wild mustard               |
| Fiddleneck tarweed | Wooly croton               |
| Field pennycress   | Wood sorrel                |
| Flixweed           | Yankeweed                  |

**1/2 TO 1 OUNCE PER ACRE**

|                   |                           |
|-------------------|---------------------------|
| Blackberry        | Honeysuckle               |
| Black henbane     | Multiflora rose and other |
| Broom snakeweed*  | wild roses                |
| Buckhorn plantain | Musk thistle***           |
| Bull thistle      | Oxeye daisy               |
| Common crupina    | Plumeless thistle         |
| Common sunflower  | Prostrate knotweed        |
| Curly dock        | Rosering gaillardia       |
| Dewberry          | Seaside arrowgrass        |
| Dyer's woad       | Sericea lespedeza         |
| Orse              | Tansy ragwort             |
| Halogeton         | Teasel                    |
| Henbit            | Wild caraway              |

**1 TO 2 OUNCES PER ACRE**

|                                       |                        |
|---------------------------------------|------------------------|
| Common mullein                        | Purple loosestrife     |
| Common tansy                          | Purple scabious        |
| Field bindweed**                      | Scotch thistle         |
| Greasewood                            | Scouringrush           |
| Gumweed                               | Salsify                |
| Houndstongue                          | Snowberry              |
| Lupine                                | St. Johnswort          |
| Old world climbing fern<br>(Lygodium) | Sulphur cinquefoil     |
| Perennial pepperwood                  | Western salsify        |
| Poison hemlock                        | Whitetop (hoary cress) |
|                                       | Wild iris              |

**1 1/2 TO 2 OUNCES PER ACRE**

|                      |                   |
|----------------------|-------------------|
| Canada thistle**     | Tall larkspur     |
| Dalmation toadflax** | Wild parsnip      |
| Duncecap larkspur    | Yellow toadflax** |
| Russian knapweed**   |                   |

**3 TO 4 OUNCES PER ACRE**

Kudzu

\* Apply fall through spring

\*\* Suppression, which is a visual reduction in weed competition (reduced population or vigor) as compared to untreated areas. Apply as a full coverage spray for best performance.

\*\*\* Certain biotypes of musk thistle are more sensitive to this product and may be controlled with rates of 1/4 to 1/2 ounce per acre. Treatments of this product may be applied from rosette through bloom stages of development.

\*\*\*\* Certain biotypes of maretail/horsetail are less sensitive to this product and may be controlled by tank mixes with herbicides with a different mode of action.

**PROBLEM WEED CONTROL**

For broader spectrum control and for use on certain biotypes of broadleaf weeds which may be resistant to this product and herbicides with the same mode of action, use the following tank mixes.

**Diablo + 2,4-D**

| <b>Weed</b>                       | <b>Rate of Patriot<br/>(ounces per acre)</b> | <b>Rate of Diablo<br/>(fl oz/acre)</b> | <b>Rate of 2,4-D<br/>(fl oz/acre)</b> |
|-----------------------------------|--|--|---------------------------------------|
| Kochia control                    | ½  | 8                                      | 16                                    |
| Spotted knapweed<br>Control       | ½  | 8                                      | 16                                    |
| Rush skelentonweed<br>suppression | 1  | 8                                      | 16                                    |

**NONCROP SITES****Application Information**

Use this product for general weed control on private, public and military lands as follows: Uncultivated areas (including airports, highway, railroad and utility rights-of-way, sewage disposal areas, etc.); uncultivated agricultural areas- noncrop producing (including farmyards, fuel storage areas, fence rows, soil bank land, barrier strips, etc.); industrial sites- outdoor (including lumberyards, pipeline and tank farms, etc.). It can also be used for the control of certain noxious and troublesome weeds.

Consult the "Weeds Controlled" and "Brush Species Controlled" tables to determine the appropriate application rate.

This product may be applied in tank mixture with other herbicides labeled for use on non-crop sites. Fully read the labels and follow all the directions and restrictions on each label.

Applications may be made by ground or air. Use a sufficient volume of water to ensure thorough coverage of the target vegetation with the application equipment being used.

**Application Timing**

For best results, this product should be applied postemergence to young, actively growing weeds. Applications may be made at any time of the year, except when the ground is frozen.

**GRASS REPLANT INTERVALS**

Following an application of this product to non-crop areas, the treated sites may be replanted with various species of grasses at the intervals specified below.

**For soils with a pH of 7.5 or less, observe the following replant intervals:**

| Species             | Rate<br>(ounces per acre) | Replant Interval<br>(months) |
|---------------------|---------------------------|------------------------------|
| Brome, Meadow       | ½ - 1                     | 2                            |
|                     | 1-2                       | 3                            |
| Brome, Smooth       | ½ - 1                     | 2                            |
|                     | 1-2                       | 4                            |
| Fescue, Alta        | ½ - 1                     | 2                            |
|                     | 1-2                       | 4                            |
| Fescue, Red         | ½ - 1                     | 2                            |
|                     | 1-2                       | 4                            |
| Fescue, Sheep       | ½ - 1                     | 1                            |
|                     | 1-2                       | 4                            |
| Foxtail, Meadow     | ½ - 1                     | 2                            |
|                     | 1-2                       | 4                            |
| Green Needlegrass   | ½ - 2                     | 1                            |
| Orchardgrass        | ½ - 1                     | 2                            |
|                     | 1-2                       | 4                            |
| Russian wildrye     | ½ - 1                     | 1                            |
|                     | 1                         | 2                            |
|                     | 2                         | 3                            |
| Switchgrass         | ½ - 1                     | 1                            |
|                     | 1-2                       | 3                            |
| Timothy             | ½ - 1                     | 2                            |
|                     | 1-2                       | 4                            |
| Wheatgrass, Western | ½ - 1                     | 2                            |
|                     | 1-2                       | 3                            |

**For soils with a pH of 7.5 or greater, observe the following replant intervals:**

| Species                | Rate<br>(ounces per acre) | Replant Interval<br>(months) |
|------------------------|---------------------------|------------------------------|
| Alkali Sacaton         | ½ - 1                     | 1                            |
|                        | 1-2                       | 3                            |
| Bluestem, Big          | ½ - 2                     | 3                            |
| Brome, Mountain        | ½ - 1                     | 1                            |
|                        | 1-2                       | 2                            |
| Grama, Blue            | ½ - 2                     | 1                            |
| Grama, Sideoats        | ½                         | 2                            |
|                        | >1/2                      | >3                           |
| Switchgrass            | ½                         | 2                            |
|                        | >1/2                      | >3                           |
| Wheatgrass, Thickspike | ½ - 2                     | 1                            |
| Wheatgrass, Western    | ½ - 1                     | 2                            |
|                        | 1 - 2                     | 3                            |

The intervals are for applications made in the Spring to early Summer. Because this product degrades slowly in cold or frozen soils, applications made in the late Summer or Fall should consider the intervals as beginning in the Spring following treatment.

Testing has indicated that there is considerable variation in response among the species of grasses when seeded into areas treated with this product. If species other than those listed above are to be planted into



areas treated with this product, a field bioassay should be performed, or previous experience may be used, to determine the feasibility of replanting treated sites.

### **TURF, INDUSTRIAL (UNIMPROVED ONLY)**

#### **Application Information**

Use this product for selective weed control in unimproved industrial turf where certain grasses are well established and desired as ground cover. This product can also be used for the control of certain noxious and troublesome weeds in turf.

In addition to conventional spray equipment, this product may also be applied with invert emulsion equipment. When using an invert emulsion, mix the prescribed rate of this product in the water phase.

Consult the "Weeds Controlled" table to determine which weeds will be controlled by the following specifications:

| <b>Turf type</b>                           | <b>Rate of Patriot<br/>(ounces/acre)</b> |
|--|--|
| <b>Fescue and Bluegrass</b>                | <b>¼ to 1/2</b>                          |
| <b>Crested Wheatgrass and Smooth Brome</b> | <b>¼ to 1</b>                            |
| <b>Bermudagrass</b>                        | <b>¼ to 2</b>                            |

#### **Application Timing**

Applications may be made at anytime of the year, except when the soil is frozen.

When a spring application is made on fescue or bluegrass, a second application may be made during the summer after full seedhead maturation.

### **GROWTH SUPPRESSION AND SEEDHEAD INHIBITION (Chemical Mowing)**

#### **Application Information**

Use this product for growth suppression and seedhead inhibition in well established fescue and bluegrass turf at the use rate of ¼ to ½ ounce per acre.

#### **Tank Mix Combination**

This product may be tank mixed with T-Pac E-Pro MEC for improved performance in the regulation of growth and seedhead suppression. Tank mix ¼ to ½ ounce of this product with 2 to 4 ounces of T-Pac E-Pro MEC

#### **Application Timing**

Application may be made after at least 2 to 3 inches of new growth has emerged until the appearance of the seed stalk.

#### **Fescue Precautions:**

This product may temporarily stunt tall fescue, cause it to turn yellow, or cause seedhead suppression. To minimize these symptoms, take the following precautions:

- Do not use more than 4/10 ounce per acre of this product.
- Tank mix this product with 2,4-D.
- Use the lowest specified rate for target weeds.
- Use a non-ionic surfactant at ½ to 1 pint per 100 gallons of spray solution.
- Make application later in the spring after the new growth is 5 to 6 inches tall, or in the fall.
- Do not use a surfactant when liquid nitrogen is used as a carrier.
- Do not use a spray adjuvant other than non-ionic surfactant.
- The yields from the first cutting may be reduced due to seedhead suppression resulting from treatment with this product.

**IMPORTANT PRECAUTIONS**  
**-- INDUSTRIAL TURF ONLY**

- An application of this product may cause temporary discoloration (chlorosis) of the grasses. Use the lower specified rates for minimum discoloration.
- With fescue and bluegrass, sequential applications made during the same or consecutive growth periods (i.e. spring and fall) may result in excessive injury to turf.
- Excessive injury may result when this product is applied to turf that is under stress from drought, insects, disease, cold temperatures (winter injury) or poor fertility.
- Do not use this product on bahiagrass.

**NATIVE GRASSES**

Use this product for weed control and suppression in the establishment and maintenance of native grasses. It may be used where blue grama, bluestems (big, little, plains, sand, ww spar) bromegrasses (meadow), buffalograss, green sprangletop, indiagrass, kleingrass, lovegrasses, (atherstone, sand, weeping, wilman), orchardgrass, sideoats grama, switchgrass (blackwell), wheatgrass (bluebunch, intermediate, pubescent, Siberian, slender streamband, tall, thickspike, western), and Russian wildrye are established. It may also be applied over these species in the seedling stage, except for orchardgrass and Russian wildrye.

**Application Information**

Apply this product at the rate of 1/10 ounce per acre for the control and suppression\* of bur buttercup (testiculate), common purslane, common sunflower\*, cutleaf eveningprimrose\*, flixweed\*, lambsquarters\* (common and slimleaf), maretail\*, pigweed (redroot and tumble), snow speedwell, tansymustard\* and tumble mustard (Jim Hill mustard).

\*Suppression is a visual reduction in weed competition (reduced population or vigor) as compared to untreated areas. Degree of suppression will vary with the size of weed and environmental conditions following treatment.

**Application Timing**

For established grasses, apply when weeds are in the seedling stage.

For grasses in the seedling stage, apply preplant or preemergence where the soil (seedbed) has been cultivated.

**IMPORTANT PRECAUTIONS**  
**--NATIVE GRASSES**

- Grass species or varieties may differ in their response to various herbicides. Consult your state experimental station, university, or extension agent as to sensitivity to any herbicide. If no information is available, limit the initial use of this product to a small area. Components in a grass seed mixture will vary in tolerance to this product, so the final stand may not reflect the seed ratio.
- Under certain conditions such as heavy rainfall, high pH, prolonged cold weather, or wide fluctuations in day/night temperatures prior to or soon after this product application, temporary discoloration and/or grass injury may occur. This product should not be applied to grass that is stressed by severe weather conditions, drought, low fertility, water-saturated soils, disease, or insect damage as grass injury may result. Severe winter stress, drought, disease, or insect damage before or following application also may result in grass injury.

**BRUSH CONTROL**

**Application Information**

Use this product for the control of undesirable brush growing in non-crop areas. Applications may be made by air, high volume ground application, low volume and ground applications Except as noted for multiflora rose, this product should be applied as a spray to the foliage.

The application volume required will vary with the height and density of the brush and the application equipment used. Generally, for aerial and ground applications use sufficient volumes of water to insure thorough coverage.

Regardless of application volume and equipment used, thorough coverage of the foliage, particularly the terminal growing points, is necessary for optimum results.

**BRUSH SPECIES CONTROLLED**

| <b>Species</b>                      | <b>High Volume Rate<br/>(ounces/75 gallons)</b> | <b>Broadcast Rate<br/>(ounces/acre)</b> |
|-------------------------------------|---|---|
| Ash                                 | 1-2   | 1-3                                     |
| Aspen                               | 1-2   | 1-3                                     |
| Black Locust                        | 1-2   | 1-3                                     |
| Blackberry                          | 1-2   | 1-3                                     |
| Camelthorn                          | 1-2   | 1-3                                     |
| Cherry                              | 1-2   | 1-3                                     |
| Cottonwood                          | 1-2   | 2-3                                     |
| Eastern red cedar                   | 1-2   | 2-3                                     |
| Elder                               | 1-2   | 2-3                                     |
| Elm                                 | 1-2   | 1-3                                     |
| Firs                                | 3   | 1-2                                     |
| Hawthorn                            | 1-2   | 1-3                                     |
| Honeysuckle                         | 1-2   | 1/2-1                                   |
| Mulberry                            | 1-2   | 2-3                                     |
| Multiflora rose                     | 1-2   | 1-3                                     |
| Muscadine (wild grape)              | 1-2   | 2-3                                     |
| Oaks                                | 1-2   | 1-3                                     |
| Ocean spray ( <i>Holodiscus</i> )   | 1-2   | 2-3                                     |
| Osage orange                        | 1-2   | 2-3                                     |
| Red maple                           | 1-2   | 2-3                                     |
| Salmonberry                         | 1/2-1   | 1-3                                     |
| Snowberry                           | 1/2-1   | 1-3                                     |
| Spruce (black and white)            | 3   | 2-3                                     |
| Thimbleberry                        | 1/2-1   | 1-3                                     |
| Tree of heaven ( <i>Ailanthus</i> ) | 1-2   | 1-2                                     |
| Tulip tree                          | 1/2-1   | 1-3                                     |
| Wild roses                          | 1/2-1   | 1-3                                     |
| Willow                              | 1/2-1   | 1-3                                     |

For low volume and ultra-low volume ground applications, mix 4 to 8 ounces of this product per 75 gallons of spray solution.

**Application Timing**

Make a foliar application of the specified rate of this product during the period of full leaf expansion in the spring until the development of full fall coloration on deciduous species to be controlled. Coniferous species may be treated at anytime during the growing season.

**Tank Mix Combinations-**

This product may be tank mixed with any product labeled for non-crop brush control at the application rates specified on the companion product's label for the species specified on the product's companion

label. Read and follow the label instructions of both products when tank mixing. Follow the most restrictive limitations of the products labels being tank mixed.

**Low Rate Applications**

**Nufarm Polaris® Herbicide**

Combine 1 to 2 ounces of this product with 1 to 4 pints of Nufarm Polaris Herbicide per acre and apply as a broadcast spray. Aerial applications should use a minimum of 5 gallons per acre spray volume. In addition to species listed above controlled by this product, this combination controls black gum, hophornbeam, sassafras, sweetgum, Vaccinium species, dogwood, myrtle dahoon, hickories, and persimmon.

**Trooper 22K + Nufarm Polaris Herbicide**

Combine 1 to 1 ½ ounce of this product with 2 to 8 fluid ounces of Nufarm Polaris and 1 to 2 pints of Trooper 22K per 75 gallons of water. Apply as a high volume spray. This tank mix controls cherry, elms, box elder, maples, hackberry, redbud, ash, oaks (including shingle oak), black locust and sassafras.

Trooper 22K is a restricted use pesticide

**Spotgun Basal Soil Treatment**

For control of multiflora rose, prepare a spray suspension of this product by mixing 1 ounce per gallon of water. Mix vigorously until this product is dispersed and agitate periodically while applying the spray suspension.

Apply the spray preparation with an exact delivery handgun applicator. Apply at the rate of 4 milliliters for each 2 feet of rose canopy diameter. Direct the treatment to the soil within 2 feet of stem union. When treating large plants and more than one delivery is required, make applications on opposite sides of the plant.

Applications should be made from early spring to summer.

**IMPORTANT PRECAUTIONS**

**-- NON-CROP BRUSH ONLY**

- When using tank mixtures of this product with companion herbicides, read and follow all the use instructions, application rates, warnings and precautions appearing on the labels. Follow the most restrictive label instruction for each of the herbicides used.

**SPRAY EQUIPMENT**

Spraying and mixing equipment used with this product must not be used for subsequent application to food or feed crops with the exception of pastures, rangeland and wheat, as low rates of this product can kill or severely injure most food or feed crops.

The selected sprayer should be equipped with an agitation system to keep this product suspended in the spray tank.

Use a sufficient volume of water to thoroughly cover the foliage of undesirable weeds, generally 10 to 50 gallons per acre. Select a spray volume and delivery system that will deliver a uniform spray pattern. Be sure the sprayer is calibrated before use. Avoid overlapping and shut off spray booms while starting, turning, slowing, or stopping, to avoid injury to desired plants.

Refer to the brush control section of this label for information unique to that particular use.

**MIXING INSTRUCTIONS**

1. Fill the tank ¼ to 1/3 full of water.
2. While agitating, add the required amount of this product.
3. Continue agitation until this product is fully dispersed, at least 5 minutes.

4. Once this product is fully dispersed, maintain agitation and continue filling tank with water. this product should be thoroughly mixed with water before adding any other material.
5. As the tank is filling, add tank mix partners (if desired) then add the necessary volume of nonionic surfactant. Always add surfactant last.
6. If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.
7. This product spray preparations are stable if they are pH neutral or alkaline and stored at or below 100°F.
8. If this product and a tank mix partner are to be applied in multiple loads, pre-slurry this product in clean water prior to adding to the tank. This will prevent the tank mix partner from interfering with the dissolution of this product.
9. All tank mixes with this product should be sprayed and the spray tank emptied at the end of each days work.

### SPRAYER CLEANUP

Spray equipment must be cleaned before this product is sprayed. Follow the cleanup procedures specified on the labels of previously applied products. If no directions are provided, follow the six steps outlined below.

#### At the End of the Day

When multiple loads of this product are applied, the interior of the tank be rinsed with fresh water then partially filled, and the boom and hoses flushed at the end of each day of spraying. This will prevent the buildup of dried pesticide deposits that can accumulate in the application equipment.

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water. Loosen and physically remove any visible deposits.
2. Fill the tank with clean water and 1 gal of household ammonia\* (contains 3% active) for every 100 gallons of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 min. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank.
3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat step 2.
5. Rinse tank, boom, and hoses with clean water.
6. If only ammonia is used as a cleaner, the rinsate solution may be applied back to the crop(s) listed on this label. Do not exceed the maximum labeled use rate. If other cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on site or at an approved waste disposal facility.

\*Equivalent amounts of an alternate-strength ammonia solution or an Nufarm-approved cleaner can be used in the cleanout procedure. Carefully read and follow the individual cleaner instructions. Consult you agricultural dealer, applicator, or Nufarm representative for a listing of approved cleaners.

#### Notes:

1. **ATTENTION:** Do not use chlorine bleach with ammonia, as dangerous gases will form. Do not clean equipment in an enclosed area.
2. Steam-cleaning aerial spray tanks prior to performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When this product is tank mixed with other pesticides, all required cleanout procedures should be examined and the most rigorous procedure should be followed.
4. In addition to the cleanout procedure, all pre-cleanout guidelines on subsequently applied products should be followed as per the individual labels.

## 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 of these factors when making applications.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

### IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150-200 microns). 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- General Techniques

- **Volume-** Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rate flows produce larger droplets.
- **Pressure-** Use the lower spray pressures specified 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 provides uniform coverage.
- **Nozzle Orientation-** Orienting nozzles so that the spray is emitted backwards, parallel to the air stream will produce larger droplets than other orientations.
- **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-** The boom length should not exceed  $\frac{3}{4}$  of the wing or rotor length- longer booms increase drift potential.
- **Application Height-** Application more than 10 ft above the canopy increases the potential for spray drift.

## BOOM HEIGHT

Setting the boom at the lowest labeled 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 GUSTY OR WINDLESS CONDITIONS. Note:** Local terrain can influence wind patterns. Every applicator should 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 the 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 PRECAUTIONS**

- Do not drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the product may be washed or moved into contact with their roots, as injury or loss of desirable trees or other plants may result.
- Treatment of powdery, dry soil or light, sandy soil when there is little likelihood of rainfall soon after treatment may result in off target movement and possible damage to susceptible crops when soil particles are moved by wind or water. Injury to crops may result if treated soil is washed, blown, or moved onto land used to produce crops. Exposure to this product may injure or kill most crops. Injury may be more severe when crops are irrigated. Do not apply this product when these conditions are identified and powdery, dry soil or light, and sandy soils are known to be prevalent in the area being treated.
- Applications made where runoff water flows onto agricultural land may injure crops. Applications made during periods of intense rainfall, to soils saturated with water, to surfaces paved with materials such as asphalt or concrete, or to soils through which rainfall will not readily penetrate may result in runoff and movement of this product. Do not treat frozen soil. Treated soil should be left undisturbed to reduce the potential for this product movement by soil erosion due to wind or water.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas.
- Do not apply through any type of irrigation system.
- Do not apply to irrigated land where the tailwater will be used to irrigate crops.
- Do not apply to snow-covered ground.
- Spraying and mixing equipment used with this product must not be used for subsequent application to food or feed crops with the exception of pastures, rangeland, and wheat, as low rates of this product can kill or severely injure most food or feed crops.
- Applications of this product to pastures, rangeland or CRP undersown with legumes may cause injury to the legumes. Legumes in a seeding mixture may be severely injured or killed following an application of this product.
- When used as directed, there are no grazing or haying restrictions for use rates of 1 2/3 ounces per acre and less. At use rates of 1 2/3 to 3 2/3 ounces per acre, forage grasses may be cut for hay fodder or green forage and fed to livestock, including lactating animals, 3 days after treatment.
- Do not use this product in the following counties of Colorado: Saguache, Rio Grande, Alamosa, Costilla and Conejos
- Do not use this product in California.
- Do not use on grasses grown for seed.

**STORAGE AND DISPOSAL**

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

**Storage and Spill Procedures:** Store upright at room temperature. Avoid exposure to extreme temperatures. In case of spillage or leakages, soak up with an absorbent material such as sand, sawdust, earth, Fuller's earth, etc. Dispose of with chemical waste.

**Pesticide Disposal:** Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of at or by an approved waste disposal facility.

**Container Disposal:** Nonrefillable container. Do not reuse or refill this container. Clean container 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 ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available.

**WARRANTY DISCLAIMER**

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

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**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.**

(RV20090729)

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**NOTIFICATION**

**AUG 25 2009**