

## SPECIMEN LABEL

This information is for promotional purposes only. Space considerations may require information to be omitted. Always refer to the actual package for complete label verbiage. This product may not yet be available or approved for sale or use in your area.

# SPYDER<sup>®</sup> Extra

## Selective Herbicide

Dispersible granules

### ACTIVE INGREDIENTS:

#### Sulfometuron Methyl:

Methyl 2-[[[(4,6-dimethyl-2-pyrimidinyl)amino]  
-carbonyl]amino]sulfonyl]benzoate .....56.25%

#### Metsulfuron Methyl:

Methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)  
amino]-carbonyl]amino]sulfonyl]benzoate..... 15.00%

**OTHER INGREDIENTS:** .....28.75%

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

### KEEP OUT OF REACH OF CHILDREN CAUTION

See Inside Label Booklet for FIRST AID  
and PRECAUTIONARY STATEMENTS

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

Product of China  
EPA Reg. No. 228-690  
EPA Est. No.

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



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

Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing.

**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, use detergent and hot water. Keep and wash PPE separately from other laundry.

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

**USER SAFETY RECOMMENDATIONS**

**Users should:**

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

**FIRST AID**

**IF ON SKIN OR CLOTHING**

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

**IF IN EYES**

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

**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.

**ENVIRONMENTAL HAZARDS**

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

This herbicide is injurious to plants at extremely low concentrations. Non-target plants may be adversely affected from drift and runoff.

**GENERAL INFORMATION**

This product is a dispersible granule that is mixed in water and applied as a spray or impregnated on dry, bulk fertilizer. This product controls many annual and perennial grasses and broadleaf weeds in conifer plantations and non-crop sites. It also may be used to control certain hardwoods and vines when applied in site preparation treatments.

This product may be used for general weed control on terrestrial non-crop sites and for selective weed control in certain types of unimproved turf grasses on these same sites. This product may be used for the control of certain woody plants, vines and herbaceous weeds in site preparation and release of various conifers. This product can be tank mixed with other herbicides registered for use in conifer plantations and non-crop sites. When tank mixing, use the most restrictive limitations from the labeling of both products.

Herbaceous weeds are controlled by both preemergence and postemergence activity. The best results on undesirable hardwoods and vines are obtained with a foliar spray between full leaf expansion in the spring and normal defoliation in the fall. The best results are obtained when the application is made before or during the early stages of weed growth before weeds develop an established root system. Moisture is required to move this product into the root zone of weeds for preemergence control.

This product may be applied on conifer plantations and non-crop sites that contain areas of temporary surface water caused by 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, seasonally dry flood plains and transitional areas between upland and lowland sites when no water is present. It is also permissible to treat marshes, swamps and bogs after water has receded, as well as seasonal dry flood deltas. DO NOT make applications to natural or man-made bodies of water such as lakes, reservoirs, ponds, streams and canals.

A drift control agent can be used at the manufacturer's specified rate in the application of this product.

This product is non-corrosive, nonflammable, nonvolatile, and does not freeze.

For best postemergence results, apply this product to young, actively growing weeds. The use rate depends upon the weed species, weed size at application and soil texture. 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

Use a high rate on established plants and on fine-textured soils and a lower rate on smaller weeds and coarse-textured soils.

This product contains sulfometuron methyl. When applied alone or in combination with other products containing sulfometuron methyl, do not apply more than 6 ounces of active ingredient per acre per year.

This product also contains metsulfuron methyl. When applied alone or in combination with other products containing metsulfuron methyl, do not apply more than 2.4 ounces of active ingredient per acre per year.

**ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY**

When applied as a spray, this product is absorbed by both the roots and foliage of plants, rapidly inhibiting the growth of susceptible weeds. When applied on dry fertilizer, this product is absorbed primarily by the roots. Two to 3 weeks after application to weeds, leaf growth slows, and the growing points turn reddish-purple. Within 4 to 6 weeks of application, leaf veins and leaves become discolored and the growing points subsequently die.

Warm, moist conditions following application accelerate the herbicidal activity of this product; cold, dry conditions delay the herbicidal activity. In addition, undesirable hardwoods, vines and weeds hardened-off by drought stress are less susceptible to this product. Moisture is needed to move this product into the soil for preemergence weed control.

### 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 dominate 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 areas using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide-resistant 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. Do not let weed escapes go to seed. If applicable, see **Weeds Controlled** section of label for additional information on managing herbicide-resistant weed 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 herbicides 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 principals 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.

This product should be used only in accordance with use instructions on this label or in supplemental labeling.

Nufarm Americas Inc. will not be responsible for losses or damages resulting from the use of this product in any manner not specifically instructed by Nufarm. User assumes all risks associated with such non-use.

Do not apply more than 10-2/3 ounces per acre per year.

Do not use on food or feed crops.

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.

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

- Coveralls
- Chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinylchloride
- 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.

Use on non-crop sites and turf (unimproved) are not within the scope of the Worker Protection Standard.

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

### CONIFER PLANTATIONS

#### APPLICATION INFORMATION

When applied as a spray, this product is expected to control certain undesirable woody plants, vines, and many broadleaf weeds and grasses in conifer plantation sites.

Apply sprays by ground equipment or by helicopter. Apply impregnated fertilizer by ground equipment or by air (helicopter or fixed wing aircraft) to control broadleaf weeds and grasses.

When applied as a spray, this product controls woody plants and vines by postemergent foliar activity. The best results are obtained with foliar spray between full leaf expansion in the spring and normal defoliation in the fall.

This product may be tank mixed with other herbicides registered for use in conifer plantations; when tank mixing use the most restrictive limitations from the labels of both products.

#### APPLICATION TIMING

To control broadleaf weeds and grasses, spray this product before herbaceous weeds emerge or shortly thereafter. Apply impregnated fertilizer before weeds emerge.

#### APPLICATION RATES

Apply this product at the rates indicated by conifer species. Use a lower rate on coarse-textured soils (i.e., loamy sands, sandy loams) and a higher rate on fine textured soils (i.e. sandy clay loams and silty clay loams).

#### WEEDS CONTROLLED

This product effectively controls or suppresses the weeds and vines listed under **Weeds Controlled** in the **Non-Crop** section of this label when applied at the rates specified.

## CONIFER SITE PREPARATION

### APPLICATION BEFORE TRANSPLANTING

Make all applications before transplanting to control specified hardwoods, vines, broadleaf weeds and grasses. To improve control of targeted pests, add a surfactant at the rate specified on the manufacturer's label or as limited by the companion product (tank mixtures) label.

USE RATES FOR SELECTED SPECIES USE RATES BEFORE TRANSPLANTING CONIFERS		
Species	Rate (ounces/acre)	When to Transplant into Treated Areas
Loblolly pine	3 to 4	Planting season following application.
Slash pine	3	Planting season following application.
Black spruce	2-2/3 to 5-1/3	Not less than 13 months following application.
Red pine	1-1/3 to 2-2/3	The following spring or summer but not less than 3 months after application. Areas receiving 2/3 to 1-1/3 oz./acre may be transplanted in a minimum of 30 days following application.
Douglas fir	2-2/3 to 5-1/3	Planting season following application.

Other species of conifers may be planted providing the user has experience indicating acceptable tolerance to this product. Without prior experience, test for tolerance to this product on a small area of plantings before large-scale plantings are made. The user accepts all responsibility for injury on any conifer species not listed above.

### TANK MIXTURES

This product may be tank mixed with site preparation treatments applied in the late summer to broaden the spectrum of undesirable hardwoods controlled and provide herbaceous weed control in the year following transplanting.

#### GLYPHOSATE

Tank mix 4 to 8 ounces of this product with 2 to 10 pounds of active ingredient (isopropylamine salt) of glyphosate per acre. Refer to the glyphosate product container for a list of species controlled.

#### IMAZAPYR

Tank mix 4 to 8 ounces of this product with 5 to 12 ounces of active ingredient (isopropylamine salt) of imazapyr per acre. Slash and loblolly pine may be transplanted the planting season following application. This tank mixture controls:

Cherry	Hickory*	Persimmon
Dogwood	Oak, red	Sassafras
Elms	Oak, water	Sweetgum

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

#### GLYPHOSATE + IMAZAPYR

Mix 2 to 4 ounces of this product with 8 to 32 ounces of active ingredient (isopropylamine salt) of glyphosate plus 5 to 6 ounces of active ingredient (isopropylamine salt) of imazapyr per acre. Slash and loblolly pines may be transplanted the planting season following application. This tank mixture controls:

Cherry	Hickory*	Persimmon
Dogwood	Oak, red	Sassafras
Elms	Oak, water	Sweetgum

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

#### VELPAR® DF, VELPAR® L OR VELPAR® ULW

Tank mix 4 to 8 ounces of this product per acre with the rates specified on the Velpar label for various soil textures. Loblolly and slash pines may be transplanted the planting season following application. Refer to the Velpar product label for a list of species controlled.

#### IMPROVED BRUSH CONTROL

Following a spring Velpar ULW application, a tank mixture of this product at 4 ounces per acre plus a minimum of 2.5 ounces of active ingredient imazapyr (isopropylamine salt) per acre will provide improved brush control.

These brush species include but are not limited to:

American beautyberry	<i>Calicarpa americana</i>
Southern dewberry	<i>Rubus spp.</i>
Huckleberry	<i>Vaccinium spp.</i>

Application should be made in the summer or fall following a spring application of Velpar ULW. For best results make the application after brush species have completely defoliated twice following the Velpar ULW application and refoilation of target brush species is evident.

This product applied at this time will provide herbaceous weed control into the early growing season of the year following application. This treatment also targets brush species remaining after the spring Velpar ULW application.

Loblolly, slash and longleaf pine may be transplanted the planting season following application.

Where burning is desired, burn only after adequate rainfall has occurred to move this product into the soil. Soil disturbance from bedding or plowing may reduce spring herbaceous weed control.

## CONIFER RELEASE

### APPLICATION AFTER TRANSPLANTING

Apply this product after transplanting to control certain species of hardwoods, broadleaf weeds and grasses as listed under **Weeds Controlled** in the **Non-Crop** section of this label.

USE RATES FOR SELECTED SPECIES Use Rates After Transplanting Conifers	
Species	Rate (ounces/acre)
Loblolly pine	2-2/3 to 4
Slash pine	2-2/3 to 3

## TANK MIXTURES

### HERBACEOUS WEED CONTROL

For loblolly pine, apply this product at 2 to 4 ounces per acre plus Arsenal® AC (Applicators Concentrate) at 2 to 6 fluid ounces per acre.

For slash pine, apply this product at 2 ounces per acre plus Arsenal AC at 4 fluid ounces per acre. This tank mixture controls:

Common ragweed	Firewood	Panicgrass
Dogfennel	Late boneset	Pokeweed

In addition to the herbaceous weeds listed, this tank mixture will aid in the suppression of perennial grasses such as bermudagrass and johnsongrass.

### UNDESIRABLE HARDWOOD CONTROL

Apply 4 ounces of this product with 8 to 16 fluid ounces of Arsenal AC per acre to control herbaceous weeds, grasses and undesirable hardwoods. Some minor conifer growth inhibition may be observed when release treatments are made during periods of active conifer growth. To minimize potential conifer height growth inhibition, broadcast release treatments may be made late in the growing season.

For loblolly pine, a registered conifer release surfactant may be added at the rate specified on the surfactant label.

For slash pine, over-the-top broadcast release treatments must be made after mid-August and only in stands 2 to 5 years old. For over-the-top applications to slash pine, do not add a surfactant. For light (sandy) soils do not exceed 12 fluid ounces of Arsenal AC per acre.

Tank mixture controls:

Ash	Hickories*	Oak, water
Black gum	Honeysuckle	Persimmon*
Blackberry*	Hophornbeam	Red maple*
Cherry	Myrtle dahoon	Sassafras
Dogwood*	Oak, red	Sweetgum
Elms*	Oak, white	Vaccinium
Hawthorn		

\* Suppression – a visible reduction in plant population and/or plant vigor as compared to an untreated area and generally not accepted as control.

## SPECIFIC WEED PROBLEMS

### SITE PREPARATION OR AFTER PLANTING

#### KUDZU

Apply 8 ounces of this product per acre as part of a kudzu abatement program. Retreatment of any re-sprouting kudzu crowns following the initial treatment is necessary to fully control kudzu. Make applications to kudzu after leaves are fully mature and the plant has begun to bloom. Applications may continue until first frost. Apply this product as a broadcast treatment for the initial application. Use spot-spray or broadcast follow-up applications as needed for thorough coverage. Thoroughly treat foliage and stems (spray-to-wet) without excess runoff. For handgun applications, use a minimum of 100 gallons per acre. Boom or boomless sprayer applications made by ground or air (helicopter only) equipment should use a minimum of 30 gallons per acre per application pass. Double-pass applications from different directions can improve spray coverage. Prior to planting, use a non-ionic surfactant (90% active ingredient) at the rate of 1 quart per 100 gallons of spray solution (0.25% v/v). After planting, use a crop oil concentrate at the rate of 1 quart per 100 gallons of spray solution.

### FERTILIZER IMPREGNATION

Dry bulk fertilizer may be impregnated or coated with this product for application in the establishment of conifer plantations.

#### IMPREGNATION

To impregnate the fertilizer, use a system consisting of a conveyor or closed drum used to blend dry bulk fertilizers such as potassium nitrate, sodium nitrate and triple super phosphate are not compatible with this product. Diammonium phosphate, potassium chloride, 16-16-16 and 24-4-4 have been used successfully. Do not use this product on limestone.

If fertilizer materials are excessively dusty, use a suitable additive to reduce dust prior to impregnation. Dusty fertilizer may result in poor distribution and excessive risk of drift during application. The dry fertilizer must be properly impregnated and uniformly applied to avoid potential tree injury or mortality and poor weed control.

Consult the **Application Rates** section of this label for the appropriate rate of this product to be used per acre. Apply this amount of this product to the volume of fertilizer to be applied per acre. To impregnate dry bulk fertilizer, mix the amount of this product as prescribed above in a sufficient quantity of water to uniformly coat the desired amount of fertilizer. Suspensions of this product will require thorough agitation. Direct the spray nozzles to deliver a fine spray of the mixture toward the fertilizer for uniform coverage. The use of a colorant may be beneficial to visually determine the uniformity of impregnation.

Impregnation of this product to dry bulk fertilizer may vary. If absorption of the impregnating spray by the fertilizer is not adequate, the use of an absorptive powder or additive, such as Microcel E (Johns Manville Product Company) or HiSil – 233 (Pittsburg Plate Glass) may be required to produce a dry, free-flowing mixture.

Apply impregnated fertilizer as soon as possible after impregnation for optimum performance. Impregnated fertilizer may become lumpy and difficult to apply following storage. Uniform and precise application of the fertilizer impregnated with this product is essential for satisfactory weed control and to minimize tree injury.

Follow the instructions for spray tank clean out on this label for cleaning the equipment used to impregnate, transport and apply the fertilizer. Do not use the impregnation, transport or application equipment to make subsequent applications to crops.

### BROADCAST APPLICATION

Applications may be made by ground or air (helicopter or fixed wing aircraft). Accurate calibration of the application equipment is essential for uniform distribution on the soil surface. Overlaps or skips between adjoining swaths or non-uniform distribution or impregnated fertilizer within the swath will deliver poor results and may result in tree injury or mortality.

## 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, previous agricultural practices, or other stresses, may injure or kill trees.
- Applications of this product made after transplanting 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 for Christmas trees or ornamentals.
- Do not use a surfactant with this product for herbaceous weed control when making over-the-top application to conifer seedlings in the spring after transplanting. A surfactant specifically registered for conifer release may be used when targeting specific weed problems such as undesirable hardwoods. Refer to the surfactant label for specified use rates.

- Applications of this product may result in damage and mortality to other species of trees when they are present on sites with those listed in the preceding use instructions for conifer plantation uses.

## NON-AGRICULTURAL USES

### NON-CROP SITES

#### APPLICATION INFORMATION

Use this product for general weed control as follows: uncultivated non-agricultural areas (such as airports, highway, railroad, and utility rights-of-way, sewage disposal areas); uncultivated agricultural areas (non-crop producing, which includes: farmyards, fuel storage areas, fence rows, soil bank land, barrier strips); industrial sites (outdoor: such as lumberyards, pipeline and tank farms).

This product can not be used for use on recreation areas or for direct application to paved areas (surfaces).

Apply this product as a preemergence or early postemergence spray before or during the rainy season when weeds are actively germinating or growing.

Apply by ground or helicopter.

Combination with other herbicides broadens the spectrum of weeds controlled. In addition, total vegetation control can be achieved with higher rates of this product plus residual-type companion herbicides. To improve the control of weeds, add surfactant at the rate of 0.25% by volume or at the rate specified on the manufacturer's label.

Apply this product at the rates indicated by weed type. When applied at lower rates, this product provides short term control of weeds listed; when applied at higher rates, weed control is extended.

#### WEEDS CONTROLLED

This product effectively controls the following broadleaf weeds and grasses when applied at the rates shown in non-crop sites:

#### 2-2/3 to 3 Ounces Per Acre

Annual bluegrass	Downy brome (cheat)	Reed canarygrass
Annual sowthistle	False chamomile	Ripgut brome
Aster	Fescue	Rough fleabane
Bahiagrass	Fiddleneck tarweed	Rye
Barnyardgrass	Field pennycress	Salsify
Beackchervil (bur. woodland)	Flixweed	Sandbur (southern, field)
Bearded sprangletop	Florida pusley	Seashore saltgrass
Beebalm	Foxtail barley	Seaside heliotrope
Bitter sneezeweed	Foxtail fescue	Shepherd's purse
Black mustard	Goldenrod	Signalgrass
Blackeyed-susan	Green foxtail	Silky crazyweed
Blue mustard	Hairy vetch	Smallseed falseflax
Bouncingbet	Hop clover	Smooth pigweed
Bur buttercup	Houndstongue	Snowberry, western
Bur clover	Italian ryegrass	Spreading orach
Carolina geranium	Johnsongrass	Sweet clover
Chicory	Jointed goatgrass	Tansy ragwort
Clover	Lambsquarters	Tansymustard
Cocklebur	Little barley	Treacle mustard
Common chickweed	Marestail/horseweed*	Tumble mustard
Common groundsel	Maximillion sunflower	Tumble pigweed
Common mallow	Medusahead	Western ragweed
Common mullein	Miners lettuce	Wheat
Common pokeweed	Mouseear chickweed	Whitetop
Common purslane	Oxeye daisy	Whitestem filaree
Common ragweed	Pennsylvania smartweed	Wild barley
Common speedwell	Pepperweed	Wild carrot
Common tansy	Plains coreopsis	Wild garlic
Common vetch	Plantain	Wild lettuce
Common yarrow	Poison hemlock	Wild mustard
Conical catchfly	Prickly coontail	Wild oat
Corn cockle	Red brome	Wood sorrel
Cow cockle	Red fescue	Wooly cotton
Crown vetch	Redroot pigweed	Yankee weed
Dandelion	Redstem filaree	Yellow foxtail

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

#### 3 to 4 Ounces Per Acre

Black henbane	Fireweed	Prostate knotweed
Blackberry	Gorse	Rosering gaillardia
Broom snakeweed	Gumweed	Scotch thistle
Buckhorn plantain	Halogeton	Seaside arrowgrass
Bull thistle	Henbit	Sericea lespedeza
Common crupina	Honeysuckle	Snowberry
Common sunflower	Multiflora rose (wild roses)	St. Johnswort
Crabgrass	Musk thistle	Teasel
Curly dock	Panicums (annual)	White snakeroot
Dewberry	Plumeless thistle	Whitetop, hairy
Dogfennel	Poorjoe	Wild caraway
Dyer's woad		



#### 4 to 5-1/3 Ounces Per Acre

Crimson clover	Little mallow	Rush
Dogfennel	Palmer pigweed	Yellow nutsedge
Giant foxtail	Perennial pepperweed	Yellow rocket
Giant ragweed	Purple starthistle	

**Note:** Use the higher level rate ranges under the following conditions:

- Heavy weed growth
- Soils containing more than 2-1/2% organic matter
- High soil moisture areas, such as along road edges or railroad shoulders

### SPECIFIC WEED PROBLEMS

#### KOCHIA, RUSSIAN THISTLE, AND PRICKLY LETTUCE

Since biotypes of kochia, marehail, Russian thistle, and prickly lettuce are known to be resistant to this product, tank mixture combinations with herbicides having different modes of action, such as Karmex® DF, HYVAR® X or KROVAR® I DF must be used. In areas where resistance is known to exist, these weeds should be treated postemergence with other herbicides registered for their control, such as 2,4-D or dicamba. Do not allow kochia, Russian thistle or prickly lettuce to form mature seed.

#### KUDZU

Apply 8 ounces of this product per acre as part of kudzu abatement program. Retreatment of any re-sprouting kudzu crowns following the initial treatment is necessary to fully control kudzu. Make applications to kudzu after leaves are fully mature and the plant has begun to bloom. Applications may continue until first frost. Apply this product as a broadcast treatment for the initial application. Use spot-spray or broadcast follow-up applications as needed for thorough coverage. Thoroughly treat foliage and stems (spray-to-wet) without excess runoff. For handgun applications, use a minimum of 100 gallons per acre. Boom or boomless sprayer applications made by ground or air (helicopter only) equipment should use a minimum of 30 gallons per acre per application pass. Double-pass applications from different directions can improve spray coverage. Use a non-ionic surfactant (90% active ingredient) or crop oil concentrate at the rate of 1 quart per 100 gallons of spray solution (0.25% v/v).

#### TANK MIX COMBINATIONS

To improve preemergence to early postemergence control of weeds and grasses, add 2-2/3 to 5-1/3 ounces of this product per acre to the specified rates of the following herbicides: HYVAR® X herbicide, Karmex® DF herbicide, KROVAR® I DF herbicide, VELPAR L herbicide, VELPAR DF herbicide, TELAR® herbicide, glyphosate, dicamba, or 2,4-D.

Apply this product plus a combination herbicide at the rates and timing as shown on package labels for target weeds. For application method and other specifications, use the most restrictive directions for the intended combination.

Do not tank mix this herbicide with HYVAR X-L herbicide.

### TURF (UNIMPROVED ONLY)

#### APPLICATION INFORMATION

This product is used to control weeds on unimproved turf, on roadsides, or on other non-crop sites where the turf is well established as a ground cover. Applications may temporarily suppress grass growth and inhibit seedhead formation (chemical mowing).

### BERMUDAGRASS RELEASE

#### APPLICATION TIMING

Apply this product at 1/2 to 2 ounces per acre after bermudagrass has broken dormancy and is well established, usually 30 days after initial spring flush. If additional applications are necessary, apply this product again during late spring early summer. On established weeds, apply one to two weeks after mowing for the best results.

This product may also be applied in late fall or early winter. Use the lower rates on small seedling weeds and higher rate on larger weeds.

### TANK MIX COMBINATIONS – BERMUDAGRASS (SOUTH ONLY)

Apply 1 to 2 ounces this product per acre as a tank mix with 3 to 4 pounds active ingredient of MSMA per acre on well-established bermudagrass during summer. Refer to the MSMA package label for a list of additional weeds that may be controlled. Two or more sequential applications of MSMA alone may be necessary to maintain weed control.

### CENTPEDEGRASS RELEASE

#### APPLICATION TIMING

Apply 1/2 to 2 ounces per acre of this product in the fall or early winter, or in the early summer following green-up of the centipede. Refer to the listing of **Weeds Controlled** in this section for use rates and species controlled by this product.

### SMOOTH BROME AND CRESTED WHEATGRASS RELEASE AND SUPPRESSION

#### APPLICATION TIMING

Apply 1/2 to 1-1/2 ounces of this product per acre to turf after green-up and before seedheads emerge (boot stage). Ensure that desirable grasses are well established at application, as premature treatment may result in top kill and stand reduction of desirable turf. Make only one application per year.

#### WEEDS CONTROLLED

This product may be used to control the following weeds in turf (unimproved only) when applied at the use rates shown.

#### 1/2 to 1 Ounce Per Acre

Asters (except heath aster)	Common yarrow	Mouseear chickweed
Buttercups	Curly dock	Redroot pigweed
Common broomweed	False chamomile	Sweetclover
Common chicory	Field pennycress	Tansy mustard
Common chickweed	Fleabanes	White clover
Common sunflower	Goldenrod	Wild garlic
Common vetch	Little barley	

## 1 to 2 Ounces Per Acre

Bitter sneezeweed	Evening primrose	Musk thistle
Buckhorn plantain	Foxtail barley	Prairie coneflower
Carolina geranium	Giant ragweed	Redstem filaree
Cheat (downy brome)	Hairy vetch	Tumble mustard
Common dandelion	Hopclover	Wild carrot
Common mullein	Jointed goatgrass	Wild oats
Common ragweed	Medusahead	Wild parsnip
Crimson clover		

## IMPORTANT PRECAUTIONS

### UNIMPROVED TURF

- Excessive injury to turf may result if a surfactant is used with this product in applications made to actively growing turf. The user assumes all responsibility for turf injury if a surfactant is used with this product in treatments applied to actively growing turf.
- This product may temporarily discolor or cause top kill of turf grasses. Applications made while turf is dormant may delay green-up in the spring.
- Annual retreatments may reduce vigor, particularly at the higher rates, where bahiagrass, crested wheatgrass and smooth brome are grown.
- Application of this product on turf that is under stress from drought, insects, disease, cold temperatures, or late spring frost, may result in injury.

### GRASS REPLANT INTERVALS

Following a treatment with this product, at use rates up to 2 ounces per acre, the following grasses may be replanted:

Alta fescue	Orchardgrass	Sheep fescue
Meadow foxtail	Smooth brome	Western wheatgrass

The intervals are used for soils with a pH of less than 7.5. Soils having a pH greater than 7.5 will require longer intervals. The intervals are for applications made in the spring. Because degradation of this product is slowed by cold or frozen soils, applications made in the fall should consider the intervals as beginning in the spring following treatment.

Testing has indicated that there is considerable variation in response among 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 areas.

## ADDITIONAL USE INSTRUCTIONS FOR CONIFER PLANTATIONS, NON-CROP SITES AND TURF

### SPRAY EQUIPMENT

Low rates of this product can kill or severely injure most crops. Following application of this product, the use of spray equipment to apply other pesticides to crops on which this product or its active ingredients are not registered may result in their damage. The most effective way to reduce this crop damage potential is to use dedicated mixing and application equipment.

### APPLICATION

#### GROUND

Use a sufficient volume of water to ensure thorough coverage when applying this product as a broadcast or directed spray. Select a spray volume and delivery system that will ensure thorough coverage and uniform spray pattern. Be sure that the sprayer is calibrated before use. Avoid overlapping and shut off spray booms while starting, turning, slowing, or stopping to avoid injury to desired species.

#### AIR

Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern. Be sure the sprayer is calibrated. Avoid overlapping and shut off spray booms while starting, turning, or slowing to avoid injury to desired species.

### MIXING INSTRUCTIONS

- Fill spray tank 1/2 full of water.
- With the agitator running, add the proper amount of this product.
- If using a companion product, add the proper amount of this product.
- For postemergent applications, add the proper amount of spray adjuvant.
- Add the remaining water.
- Agitate the spray tank thoroughly.

Spray preparations of this product are stable if they are pH neutral or alkaline and stored at or below 100°F.

### SPRAYER CLEANUP

Thoroughly clean all mixing and spray equipment following applications of this product as follows:

- Drain tank; thoroughly rinse spray tanks, boom and hoses with clean water.
- Fill the tank with clean water and 1 gallon 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 minutes. Flush the hoses, boom and nozzles again with the cleaning solution and then drain the tank. Equivalent amounts of an alternate-strength ammonia solution or a commercial cleaner can be used in the cleanout procedure. If a commercial cleaner is used, carefully read and follow the individual cleaner instructions.
- Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
- Repeat step 2.
- Rinse the tank, boom and hoses with clean water.
- Dispose of the rinsate on a labeled site or at an approved waste disposal facility. If a commercial cleaner is used, follow the directions for rinsate disposal on the label.

#### Notes:

- Do not use chlorine bleach in combination with ammonia when cleaning spray equipment. Do not clean spray equipment in an enclosed area.
- Steam-clean aerial spray tanks before performing the above cleanout procedure to facilitate the removal of any caked deposits.
- When this product is tank mixed with other pesticides, all required cleanout procedures should be examined and the most rigorous procedure should be followed.



## SPRAY DRIFT MANAGEMENT

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

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 **Surface Temperature and 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 rated 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 provide uniform coverage.
- **NOZZLE ORIENTATION** – Orienting nozzles so that the spray is emitted backwards, parallel to the airstream, will produce larger droplets than other orientations.
- **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 AND HEIGHT

- **BOOM LENGTH (aircraft)** – The boom length should not exceed 3/4 of the wing length; using shorter booms decreases drift potential. For helicopter, use a boom length and position that prevents droplets from entering the rotor vortices.
- **BOOM HEIGHT (aircraft)** – Application more than 10 feet above the canopy increase the potential for spray drift.
- **BOOM HEIGHT (ground)** – Setting the boom at the lowest height which provides uniform coverage reduces the exposure of droplets to evaporation and wind. 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 variable direction and inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given wind speed. AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.

NOTE: Local terrain can influence wind patterns. Every applicator 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.

### SURFACE TEMPERATURE AND INVERSIONS

Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates a surface 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.

## IMPORTANT PRECAUTIONS FOR CONIFER PLANTATIONS, NON-CROP SITES AND TURF

Injury to or loss of desirable trees or other plants may result from failure to observe the following:

- If equipment is drained and flushed on or near desirable trees or other plants or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- 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 the crops are irrigated. Do not apply this product when these conditions are identified and powdery, dry soil or light or sandy soil are known to be prevalent in the area to be treated.
- Applications made where runoff water flows onto agricultural land may injure crops. Applications made during periods of rainfall, to soils saturated with water, surfaces paved with materials such as asphalts or concrete, or 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's movement by soil erosion due to wind or water.

Do not use on lawns, walks, driveways, tennis courts, or similar areas.

Keep from contact with fertilizers, insecticides, fungicides and seeds.

Do not apply in or on irrigation ditches or canals including their outer banks.

Do not apply through any type of irrigation system.

Do not use the equipment used to mix or apply this product on crops unless specifically directed by supplemental labeling. When applied on fertilizer, do not use the impregnation, transport or application equipment to make subsequent applications to crops. The mixing and application equipment may be used for conifer plantations and non-crop applications only.

If non-crop or conifer plantations sites treated with this product are to be converted to a food, feed, or fiber agricultural crop or to a horticultural crop, do not plant the treated site for at least one year after application of this product. A field bioassay must then be completed before planting to crops. To conduct a field bioassay, grow to maturity test strips of the crop(s) you plan to grow the following year. The test strips should cross the entire field including knolls and low areas. Crop response to the bioassay will indicate whether or not to plant the crop(s) grown in the test strips. In the case of suspected off-site movement of this product to cropland, soil sample should be quantitatively analyzed for this product or any other herbicide which could be having an adverse effect on the crop, in addition to conducting the above-described bioassay.

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.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store product in original container only. Store in cool, dry place.

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

**CONTAINER DISPOSAL:** Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or mix tank. Fill the container 1/4 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 flow begins to drip. Repeat this procedure two more times.

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