

ACCEPTED
FOR REGISTRATION

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New York State Department
of Environmental Conservation
Division of Materials Management
Pesticide Product Registration

Nufarm

POLARIS[®]

AC

Herbicide**For control of vegetation on forestry sites.****ACTIVE INGREDIENT:**

Isopropylamine salt of Imazapyr

(2-[4,5-dihydro-4-methyl-4-
(1-methylethyl)-5-oxo-1*H*-imidazol-
2-yl]-3-pyridinecarboxylic acid)*

53.10%

OTHER INGREDIENTS:

46.90%

TOTAL:

100.00%

*Equivalent to 43.3% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid or 4 pounds acid per gallon.**KEEP OUT OF REACH OF CHILDREN
CAUTION / PRECAUCION**

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

SEE INSIDE BOOKLET FOR FIRST AID AND ADDITIONAL
PRECAUTIONARY STATEMENTSFor Chemical Spill, Leak, Fire, or
Exposure, Call CHEMTREC
(800) 424-9300For Medical Emergencies Only,
Call (877) 325-1840EPA Reg. No. 228-480
EPA Est. No. 228-IL-1**Net Contents**
2.5 Gal.
(9.46 L)Manufactured by
Nufarm Americas Inc.
150 Harvester Drive
Burr Ridge, IL 60527
Nufarm



PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION / PRECAUCION

Harmful if inhaled. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some materials are chemical resistant to this product are natural rubber \geq 14 mils. If you want more options, follow the instructions for category A on the EPA chemical resistance category selection chart.

Mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants,
- Shoes plus socks,
- Chemical-resistant gloves for mixers and loaders, plus applicators using handheld equipment.

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. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Pilots must use an enclosed cockpit that meet the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

USER SAFETY RECOMMENDATIONS

Users should:

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

FIRST AID

IF INHALED	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
IF IN EYES	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-325-1840 for emergency medical treatment information.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to plants. Drift and run off may be hazardous to plants in water adjacent to treated areas. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean water mark. Do not contaminate water when disposing of equipment washwater or rinsate. See Directions for Use for additional precautions and requirements.

PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of this product should be mixed, stored, and applied only in stainless steel, fiberglass, plastic, and plastic-lined steel containers.

Do not mix, store, or apply this product or spray solutions of this product in unlined steel (except stainless steel) containers or spray tanks.

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 responsible for pesticide regulation.





This product must be used only in accordance with instructions and restrictions on the booklet label. Keep containers closed to avoid spills and contamination.

This product may be applied using helicopters, ground operated sprayers, low-volume hand-operated spray equipment such as back-pack and pump-up sprayers, and tree injection equipment.

Observe all cautions and limitations in the package labels of products used in combination with this product.

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.

The requirements in this box apply to use on trees being grown for sale or other commercial use or commercial seed production or for production of timber or wood products or for research purposes.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 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
- shoes plus socks
- chemical-resistant gloves made of any waterproof material
- protective eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) 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. Noncrop weed control is not within the scope of the Worker Protection Standard. See the PRODUCT INFORMATION section of this label for a description of noncrop sites. Do not enter treated areas without protective clothing until sprays have dried.

RESTRICTIONS

Do not use on food or feed crops. Do not use on Christmas trees. Do not treat irrigation ditches, or water used for crop irrigation or for domestic uses. Keep from contact with fertilizers, insecticides, fungicides, and seeds to prevent unintentional exposure of desirable vegetation to this product. Do not apply or drain or flush equipment on or near sensitive desirable 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. Do not side trim desirable vegetation with this product. Do not allow spray to drift to desirable plants.

Clean application equipment after using this product by thoroughly flushing with water.

PRODUCT INFORMATION

This product is a surfactant free aqueous solution to be mixed in water and applied as a post-emergent spray for control of most annual and perennial grasses, broadleaf weeds, vines and brambles, and hardwood brush and trees for forestry site preparation and release of conifers from woody and herbaceous competition. This product may be used for selective woody and herbaceous weed control in natural regeneration of certain conifers (see pine release). This product may also be mixed in water and used for stump and cut-stem treatment for control of unwanted woody vegetation. This product can be applied along forest roads to control undesirable woody vegetation.

This product is also used for the control of undesirable vegetation along non-irrigation ditchbanks and for the establishment and maintenance of wildlife openings, except in the state of California. See use directions for stump and cut stem treatments and herbaceous weed control and use directions for spot treatment of undesirable hardwood vegetation.

This product may be applied on forestry 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 forest management activities, except in the states of California and New York. It is permissible to treat drainage ditches, intermittent drainage, intermittently flooded low lying sites, seasonally dry flood plains, and transitional areas between upland and lowland sites when no water is present, except in the states of California and New York. Only the edge of drainage ditches can be treated for drainage ditches that contain water. It is also permissible to treat marshes, swamps, and bogs after water has receded, as well as seasonally dry flood deltas, except in the states of California and New York. Do not make applications to natural or manmade bodies of water such as lakes, reservoirs, ponds, streams, rivers and canals.

SYMPTOMOLOGY:

This product is readily absorbed through foliage and roots and is translocated rapidly throughout the plant, with accumulation in the meristematic regions. Treated plants stop growing soon after spray application. Chlorosis first appears in the youngest leaf tissue. In perennials, the herbicide is translocated into the roots, thus preventing most resprouting. Chlorosis and tissue necrosis may not be apparent in some plant species for several weeks after application. Woody plants, brush, and trees normally do not display the full extent of herbicide control until several months following application.





MIXING AND APPLICATION INSTRUCTIONS

MANAGING OFF-TARGET MOVEMENT

The following information is provided as general guidance for managing off-target movement. Specific use for this product may differ depending on the application technique used and the vegetation management objective.

Spray Drift: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and weather-related factors determines the potential for spray drift. The applicator and the entity authorizing spraying are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications: 1) The distance of the outer most operating nozzles must not exceed 3/4 the length of the rotor. 2) Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they must be observed.

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. Do not apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. 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).

CONTROLLING DROPLET SIZE

Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles - Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential.

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. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift. Do not use nozzles producing a mist droplet spray.

APPLICATION HEIGHT

Making applications at the lowest possible height (helicopter, ground driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the treatment area, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

WIND

Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. 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 low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

TEMPERATURE INVERSIONS

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

WIND EROSION

Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.





Aerial Applications:

- (1) Applicators are required to use a Coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater for release heights below 10 feet; Applicators are required to use a Very Coarse or coarser droplet size or, if specifically using a spinning atomizer nozzle, applicators are required to use a VMD of 475 microns or greater for release heights above 10 feet; Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size.
- (2) Applicators are required to use upwind swath displacement.
- (3) The boom length must not exceed 60% of the wingspan or 90% of the rotor blade diameter to reduce spray drift.
- (4) Applications with wind speeds less than 3 mph and with wind speeds greater than 10 mph are prohibited.
- (5) Applications into temperature inversions are prohibited.

Aerial Application Methods and Equipment: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

Ground Boom Applications:

- (1) Applicators are required to use a nozzle height below 4 feet above the ground or plant canopy and Coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater.
- (2) Applications with wind speeds greater than 10 mph are prohibited.
- (3) Applications into temperature inversions are prohibited.

Ground Application (Broadcast): Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

HELICOPTER SPRAY EQUIPMENT:

Thoroughly mix the required amount of this product in 5 to 30 gallons of water per acre and uniformly apply with properly calibrated aerial equipment. A suitable nonionic surfactant may be added to the spray solution to enhance control of undesirable vegetation. All precautions should be taken to minimize or eliminate spray drift. Applications should not be made under windy or gusty conditions.

The use of controlled droplet booms and nozzle configurations is recommended. A drift control agent may be added at the label rate. A foam reducing agent may be added at the recommended label rate, if needed.

RESTRICTIONS: Do not make applications by fixed wing aircraft. Maintain adequate buffer zones.

Thoroughly clean application and mixing equipment, including landing gear, immediately after use. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part.

GROUND OPERATED SPRAY EQUIPMENT:

Thoroughly mix and apply the required amount of this product in 5 to 100 gallons of water per acre. A suitable nonionic surfactant may be added to the spray solution to enhance control of undesirable vegetation. A drift control agent and a foam reducing agent may be added at the drift control agent or foam reducing agent's label rates, if needed. If desired, a spray pattern indicator may be added at the spray pattern indicator product's label rate.

For best results, uniformly cover the foliage of the vegetation to be controlled with the spray solution.

RESTRICTIONS: Do not spray under windy or gusty conditions. Maintain adequate buffer zones.

Clean application and mixing equipment after using this product by thoroughly flushing with water.

DIRECTED FOLIAR OR SPOT SPRAY EQUIPMENT:

When making directed or spot spray applications with helicopter or ground spray equipment, or low-volume hand operated spray equipment, thoroughly mix a solution of 1 to 5 percent by volume of this product and a minimum of 1/4 percent by volume nonionic surfactant in water.

To mix the spray solution, add the volume of this product and nonionic surfactant indicated in the table below to the desired amount of water.

SPRAY SOLUTION MIXING GUIDE

SOLUTION VOLUME	POLARIS® AC CONCENTRATION (%)			SURFACTANT
	1	2.5	5	
1 gallon	1-1/3 fl. oz.	3-1/3 fl. oz.	6-2/3 fl. oz.	1/3 fl. oz.
5 gallons	6-2/3 fl. oz.	1 pint	2 pints	1-2/3 fl. oz.
10 gallons	13-1/3 fl. oz.	2 pints	4 pints	3-1/3 fl. oz.
25 gallons	2 pints	5 pints	10 pints	8 fl. oz.
100 gallons	1 gallon	2.5 gallons	5 gallons	2 pints

2 tablespoons = 1 fluid ounce





For best results, uniformly cover the foliage of the vegetation to be controlled with the spray solution. Avoid making applications directly to desirable conifers. For low volume directed applications on bigleaf maple, apply using a 2.5% by volume spray solution.

RESTRICTIONS: Do not over apply causing runoff from the treated foliage. Avoid direct application to desired plant species as injury may occur. Do not exceed dosage rate per acre.

STUMP AND CUT STEM TREATMENTS

This product may be used to control undesirable woody vegetation in forest management by applying a solution of the herbicide in water to the cambium area of freshly-cut stump surfaces or to cuts on the stem of the target woody vegetation. Applications can be made at any time of the year except during periods of heavy sap flow in the spring. Tree injection and cut stem treatments are most effective in late summer and early fall.

MIXING

This product may be mixed as either a concentrated or dilute solution for stump and cut stem treatments. The dilute solution may be used for applications to the surface of the stump or to cuts on the stem of the target woody vegetation. Concentrated solutions may be used for applications to cuts on the stem. Use of the concentrated solution permits application to fewer cuts on the stem, especially for large diameter trees. Follow the application instructions to determine proper application techniques for each type of solution.

APPLICATION WITH DILUTE SOLUTIONS

To prepare a dilute solution, mix 6 fluid ounces of this product with one gallon of water.

For cut stump treatments: Spray or brush the solution onto the cambium area of the freshly cut stump surface. Insure that the solution thoroughly wets the entire cambium area (the wood next to the bark of the stump).

For tree injection treatments: Using standard injection equipment, apply 1 milliliter of solution at each injection site around the tree with no more than one inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.

For frill or girdle treatments: Using a hatchet, machete, or similar device, make cuts through the bark at intervals around the tree with no more than two inch intervals between cut edges. Spray or brush the solution into each cut until thoroughly wet.

APPLICATION WITH CONCENTRATED SOLUTIONS

To prepare a concentrated solution, use undiluted product or mix with up to 75% water, by volume.

For tree injection treatments: Using standard injection equipment, apply 1 milliliter of solution at each injection site. Make at least one injection cut for every three inches of diameter at breast height (dbh) on the target tree. For example, a three-inch dbh tree will receive 1 injection cut and a six-inch dbh tree will receive 2 injection cuts. On trees requiring more than one injection site, place the injection cuts at approximately equal intervals around the tree.

For hack and squirt treatments: Using a hatchet, or similar device, make cuts at a downward angle completely through the bark and cambium at approximately equal intervals around the tree. Make at least one cut for every three inches of diameter at breast height (dbh) on the target tree. For example, a three-inch dbh tree will receive 1 cut and a six-inch dbh tree will receive 2 cuts. Using a squirt bottle, syringe, or similar device apply 1 milliliter of the concentrated mix into each cut, ensuring that the solution does not run out of the cut.

NOTE: Injury may occur to non-target or desirable woody plants if they extend from the same root system or their root systems are grafted to those of the treated tree.



SITE PREPARATION TREATMENTS

This product may be used to control labeled grasses, broadleaf weeds, vines and brambles, and woody brush and trees on forest sites in advance of regeneration for the following conifer crop species:

Crop Species	Rate (fl. oz./A)
Loblolly Pine (<i>Pinus taeda</i>)	24-40
Loblolly X Pitch Hybrid	24-40
Longleaf Pine (<i>Pinus palustris</i>)	24-40
Shortleaf Pine (<i>Pinus echinata</i>)	24-40
Virginia Pine (<i>Pinus virginiana</i>)	24-40
Slash Pine (<i>Pinus elliotii</i>)	20-32
Douglas-Fir (<i>Pseudotsuga menziesii</i>)	12-24
Coastal Redwood (<i>Sequoia sempervirens</i>)	12-24
Western Hemlock (<i>Tsuga heterophylla</i>)	12-24
California Red Fir (<i>Abies magnifica</i>)	12-20
California White Fir (<i>Abies concolor</i>)	12-20
Jack Pine (<i>Pinus banksiana</i>)	12-16
Lodgepole Pine (<i>Pinus contorta</i>)	12-16
Pitch Pine (<i>Pinus rigida</i>)	12-16
Ponderosa Pine (<i>Pinus ponderosa</i>)	12-16
Sugar Pine (<i>Pinus lambertiana</i>)	12-16
White Pine (<i>Pinus strobus</i>)	12-16
Black Spruce (<i>Picea mariana</i>)	12-16
Red Spruce (<i>Picea rubens</i>)	12-16
White Spruce (<i>Picea glauca</i>)	12-16

Use the specified rate of this product per acre applied as a broadcast foliar spray for long-term control of labeled woody plants and residual control of herbaceous weeds. Within 4 to 6 weeks of treatment, grasses and other herbaceous weeds will be controlled and may provide fuel to facilitate a site preparation burn, if desired, to control conifers or other species tolerant to the herbicide.

Apply the specified rate of this product per acre in 5 to 30 gallons total spray solution for helicopter applications or 5 to 100 gallons total spray solution for mechanical ground spray and backpack applications. Use a minimum of 1/2 percent by volume nonionic surfactant. Use the higher label rates of this product and higher spray volumes when controlling particularly dense or multilayered canopies of hardwood stands, or difficult to control species.

Tank mixes may be necessary for chemical control of conifers and other species tolerant to this product in certain cases. Observe all precautions and restrictions on the product labels. Always follow the most restrictive label. Combinations with other products labeled for forest site preparation may kill certain plants such as legumes and blackberry which are desirable for wildlife habitat.

Where quick initial brown out (deadening of foliage) is desired for burning, apply a tank mixture of 16 to 32 fl. oz. of this product with 16 to 64 fl. oz. of Razor/Razor® Pro/Foresters® Non-Selective or 16 to 48 fl. oz. of Tahoe®4E per acre. For control of seedling pines, apply 16 to 32 fl. oz. of this product with 3 to 4 quarts Razor/Razor® Pro/Foresters® Non-Selective. For site preparation, rates less than 24 fl. oz. of this product will provide suppression of hardwood brush and trees, and some re-sprouting may occur.

Do not plant seedlings of black spruce (*Picea mariana*) or white spruce (*Picea glauca*) on sites that have been broadcast treated with this product or into the treated zone of spot or banded applications for three months following application or injury may occur.

HERBACEOUS WEED CONTROL

Use this product for selective weeding in the following conifers:

Crop Species	Rate (fl. oz./A)
Loblolly Pine (<i>Pinus taeda</i>)	6 - 10
Loblolly X Pitch Hybrid	6 - 10
Virginia Pine (<i>Pinus virginiana</i>)	6 - 10
Longleaf Pine (<i>Pinus palustris</i>) ¹	4 - 6
Slash Pine (<i>Pinus elliottii</i>) ¹	4 - 6
Douglas-Fir (<i>Pseudotsuga menziesii</i>) ¹	4 - 6

¹Use of surfactant is not recommended.

This product may be applied as a broadcast treatment, banded over tree rows, or as a directed spray for release of young conifers from herbaceous weeds. To prevent possibility of conifer injury, do not apply this product when conifers are under stress from drought, diseases, animal or winter injury, planting shock, or other stresses reducing conifer vigor. Broadcast applications may be made by helicopter, ground, or backpack sprayer. For difficult to control weeds, use the higher labeled rates. Where herbaceous weeds have overtopped conifer seedlings, a nonionic surfactant may be added to improve weed control (except for slash pine, long-leaf pine, and Douglas-fir), at a rate not to exceed 1/4 percent of spray solution volume. Some minor conifer growth inhibition may be observed when herbaceous weed control treatments are made during periods of active conifer growth.

This product may also be applied using backpack or hand-held sprayers to control herbaceous weeds around individual conifer seedlings. Mix 0.4 to 0.6 fl. oz. of this product and 0.2 fl. oz. nonionic surfactant per gallon of water. Direct the spray to the weeds and minimize the amount applied to conifer foliage for best conifer tolerance. Ensure that maximum labeled rates per acre listed for crop species above are not exceeded.

This product may be tank mixed with Spyder® to broaden the spectrum of weeds controlled. For loblolly pine, apply 4 to 6 fl. oz. of this product plus 1-2 fl. oz. Spyder® per acre. The application of this product plus Spyder® on other conifer species may cause growth suppression.

CONIFER RELEASE TREATMENTS

This product may be applied as a broadcast or directed spray application for suppression of labeled brush, tree, and herbaceous weed species. Directed spray applications may be made with lowvolume applications in conifer stands of all ages by targeting the unwanted vegetation and avoiding direct application to the conifer. Ensure that maximum labeled rates per acre listed for crop species below are not exceeded.

Use broadcast applications of this product for release of the following conifers from hardwood competition:

Crop Species	Rate (fl. oz./Acre)
Loblolly Pine (<i>Pinus taeda</i>) ³	12 - 20
Loblolly X Pitch Hybrid ³	12 - 20
Virginia Pine (<i>Pinus virginiana</i>) ³	12 - 20
Longleaf Pine (<i>Pinus palustris</i>)	12 - 16
Pitch Pine (<i>Pinus rigida</i>)	12 - 16
Shortleaf Pine (<i>Pinus echinata</i>)	12 - 16
Slash Pine (<i>Pinus elliottii</i>)	12 - 16
White Pine (<i>Pinus strobus</i>) ¹	8 - 16
California Red Fir (<i>Abies magnifica</i>)	8 - 12
California White Fir (<i>Abies concolor</i>)	8 - 12
Lodgepole Pine (<i>Pinus contorta</i>) ²	8 - 12
Douglas-Fir (<i>Pseudotsuga menziesii</i>) ²	8 - 12
Jack Pine (<i>Pinus banksiana</i>) ²	6 - 12
Black Spruce (<i>Picea mariana</i>) ²	6 - 12
Red Spruce (<i>Picea rubens</i>) ²	6 - 12
White Spruce (<i>Picea glauca</i>) ²	6 - 12

¹ Do not make applications to white pine stands younger than three years old. To minimize potential white pine injury, release treatments should not be made prior to July 15.



² Applications should be made after formation of final conifer resting buds in the fall or height growth inhibition may occur.

³ Mid-rotation release: For broadcast applications below the pine canopy in established stands of loblolly pine, loblolly X pitch hybrid, and Virginia pine use 16-32 fl. oz. product per acre. For mid-rotation release of other species use rates listed above.

For slash pine and longleaf pine, broadcast release treatments over the top of pines for the purpose of woody plant control must be made after August 15 and only in stands 2 through 5 years old. For applications over the top of slash pine and longleaf pine, do not add surfactant and use lower labeled rates on sandy soils.

Apply the specified rate of this product per acre when making broadcast applications with helicopter or ground spray equipment. Refer to mixing and application instructions for proper spray volumes. A nonionic surfactant may be added at no more than 1/4 percent by volume.

Use the higher label rates of this product when controlling particularly dense stands or difficult to control species. 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, do not make broadcast applications to conifer stands, except loblolly pine, before the end of the second growing season. To minimize potential conifer height growth inhibition, broadcast release treatments may be made late in the growing season. To prevent possibility of conifer injury, Do not apply this product when conifers are under stress from drought, diseases, animal or winter injury, or other stresses reducing conifer vigor.

This product may be used to release loblolly pine seedlings during the first growing season following planting or for one-year-old natural loblolly pine regeneration. For one-year-old loblolly pine release, apply 12-20 fl. oz./A of this product after July 15. The use of rates below 16 fl. oz./A is intended for hardwood growth suppression and some hardwood resprouting should be expected.

USE POLARIS® AC HERBICIDE FOR SPOT TREATMENT OF UNDESIRABLE HARDWOOD VEGETATION:

This product may be used as a directed foliar or cut stem application to control undesirable brush and hardwoods in the management of stands of all ages for the conifer species listed in the broadcast application section above. Refer to mixing and application instructions in the directed foliar or cut stem sections above for proper use rates, equipment, and application techniques. Ensure that the maximum labeled rates per acre listed for crop species are not exceeded. Cut stem applications may be used for spot treatment of undesirable hardwoods in Ponderosa pine stands using 12 fl. oz. or less of product per acre.

Avoid direct application to desired plant species as injury may occur. Injury may occur to non-target or desirable hardwoods or conifers if they extend from the same root system or their root systems are grafted to those of the treated tree or if their roots extend into the treated zone.

LATE ROTATION VEGETATION CONTROL IN WESTERN CONIFERS

In California, the Pacific Northwest and Inland Northwest, broadcast aerial applications of this product up to 24 fl. oz./A are permissible in conifer stands that are targeted for harvesting the year following treatment. Use minimum spray volume of 15 gallons per acre. Significant conifer injury or mortality must be expected. Do not use this treatment if conifer injury or mortality cannot be tolerated.

BAG AND SPRAY APPLICATIONS FOR CONIFER RELEASE

In Douglas-fir and Ponderosa pine stands, broadcast applications of this product up to 16 fl. oz./A are permissible when the trees are covered by bags prior to the application. The bags must prevent the spray mix from contacting the conifer foliage. On sites with coarse textured soils (e.g. decomposed granite, pumice, sandy or rocky sites) or low levels of soil organic matter (generally 5% or less) significant conifer growth inhibition and mortality is possible. Do not use this treatment on these types of sites if conifer growth inhibition and mortality cannot be tolerated.

WEEDS CONTROLLED

This product will provide post-emergence control and some residual control of the following target vegetation species. Degree of control is both species and rate dependent. This product must be used only in accordance with the directions for use on this label.

GRASSES

The species of annual and perennial grasses controlled by this product include the following:

Annual bluegrass (<i>Poa annua</i>)	Cogongrass (<i>Imperata cylindrica</i>) ²	Goosegrass (<i>Eleusine indica</i>)
Bahiagrass (<i>Paspalum notatum</i>)	Crabgrass (<i>Digitaria spp.</i>)	Guineagrass (<i>Panicum maximum</i>)
Barnyardgrass (<i>Echinochloa crus-galli</i>)	Crowfootgrass (<i>Dactyloctenium aegyptium</i>)	Italian ryegrass (<i>Lolium multiflorum</i>)
Beardgrass (<i>Andropogon spp.</i>)	Dallisgrass (<i>Paspalum dilatatum</i>)	Itchgrass (<i>Rottboellia exaltata</i>)
Bermudagrass (<i>Cynodon dactylon</i>) ¹	Downy brome (<i>Bromus tectorum</i>)	Johnsongrass (<i>Sorghum halepense</i>) ¹
Big bluestem (<i>Andropogon gerardii</i>)	Fall panicum (<i>Panicum dichotomiflorum</i>)	Junglerice (<i>Echinochloa colonum</i>)
Broadleaf signalgrass (<i>Brachiaria platyphylla</i>)	Feathertop (<i>Pennisetum villosum</i>)	Kentucky bluegrass (<i>Poa pratensis</i>)
Canada bluegrass (<i>Poa compressa</i>)	Fescue (<i>Festuca spp.</i>)	Lovegrass (<i>Eragrostis spp.</i>) ¹
Cattail (<i>Typha spp.</i>)	Foxtail (<i>Setaria spp.</i>)	Orchardgrass (<i>Dactylis glomerata</i>)
Cheat (<i>Bromus secalinus</i>)	Giant reed (<i>Arundo donax</i>)	<i>Panicum spp</i>

(continued)





GRASSES (continued)

The species of annual and perennial grasses controlled by this product include the following:

Paragrass (<i>Brachiaria mutica</i>)	Sand dropseed (<i>Sporobolus cryptandrus</i>)	Wild barley (<i>Hordeum spp.</i>)
Phragmites (<i>Phragmites australis</i>)	Sandbur (<i>Cenchrus spp.</i>)	Wild oats (<i>Avena fatua</i>)
Prairie cordgrass (<i>Spartina pectinata</i>)	Smooth brome (<i>Bromus inermis</i>)	Wirestem muhly (<i>Muhlenbergia frondosa</i>)
Prairie threeawn (<i>Aristida oligantha</i>)	Sprangletop (<i>Leptochloa spp.</i>)	Witchgrass (<i>Panicum capillare</i>)
Quackgrass (<i>Agropyron repens</i>)	Timothy (<i>Phleum pratense</i>)	Woolly cupgrass (<i>Eriochloa villosa</i>)
Reed canary grass (<i>Phalaris arundinacea</i>)	Torpedograss (<i>Panicum repens</i>)	
Saltgrass (<i>Distichlis stricta</i>)	Vaseygrass (<i>Paspalum urvillei</i>)	

¹ Use higher labeled rates.

² Use minimum of 24 fl. oz. per acre.

BROADLEAF WEEDS

The species of annual and perennial broadleaf weeds controlled by this product include the following:

Arrowwood (<i>Pluchea sericea</i>)	Gray rabbitbrush (<i>Chrysothamnus nauseosus</i>)	Pusley, Florida (<i>Richardia scabra</i>)
Broom snakeweed (<i>Gutierrezia sarothrae</i>)	Henbit (<i>Lamium alexicaule</i>)	Rocket, London (<i>Sisymbrium irio</i>)
Bull thistle (<i>Cirsium vulgare</i>)	Hoary vervain (<i>Verbena stricta</i>)	Rush skeletonweed (<i>Chondrilla juncea</i>)
Burclover (<i>Medicago spp.</i>)	Horseweed (<i>Coryza canadensis</i>)	Russian knapweed (<i>Centaurea repens</i>)
Burdock (<i>Arctium spp.</i>)	Indian mustard (<i>Brassica juncea</i>)	Russian thistle (<i>Salsola kali</i>)
Camphorweed (<i>Heterotheca subaxillaris</i>)	Japanese bamboo/knotweed (<i>Polygonum cuspidatum</i>)	Saltbush (<i>Atriplex spp.</i>)
Canada thistle (<i>Cirsium arvense</i>)	Knotweed, prostrate (<i>Polygonum aviculare</i>)	Shepherd's purse (<i>Capsella bursapastoris</i>)
Carolina geranium (<i>Geranium carolinianum</i>)	Kochia (<i>Kochia scoparia</i>)	Silverleaf nightshade (<i>Solanum elaeagnifolium</i>)
Carpetweed (<i>Mullugo verticillata</i>)	Lambsquarters (<i>Chenopodium album</i>)	Smartweed (<i>Polygonum spp.</i>)
Chickweed, mouseear (<i>Cerastium vulgatum</i>)	Little mallow (<i>Malva parviflora</i>)	Sorrell (<i>Rumex spp.</i>)
Clover (<i>Trifolium spp.</i>)	Milkweed (<i>Asclepias spp.</i>)	Sowthistle (<i>Sonchus spp.</i>)
Cocklebur (<i>Xanthium strumarium</i>)	Miners lettuce (<i>Montia perfoliata</i>)	Spurge, annual (<i>Euphorbia spp.</i>)
Common chickweed (<i>Stellaria media</i>)	Mullein (<i>Verbascum spp.</i>)	Stinging nettle (<i>Urtica dioica</i>)
Common ragweed (<i>Ambrosia artemisiifolia</i>)	Nettleleaf goosefoot (<i>Chenopodium murale</i>)	Sunflower (<i>Helianthus spp.</i>)
Cudweed (<i>Gnaphalium spp.</i>)	Oxeye daisy (<i>Chrysanthemum leucanthemum</i>)	Sweet clover (<i>Melilotus spp.</i>)
Dandelion (<i>Taraxacum officinale</i>)	Pepperweed (<i>Lepidium spp.</i>)	Tansymustard (<i>Descurainia pinnata</i>)
Desert camelthorn (<i>Alhagi pseudalhagi</i>)	Pigweed (<i>Amaranthus spp.</i>)	Texas thistle (<i>Cirsium texanum</i>)
Diffuse knapweed (<i>Centaurea diffusa</i>)	Plantain (<i>Plantago spp.</i>)	Velvetleaf (<i>Abutilon theophrasti</i>)
Dock (<i>Rumex spp.</i>)	Pokeweed (<i>Phytolacca americana</i>)	Western ragweed (<i>Ambrosia psilostachya</i>)
Dogfennel (<i>Eupatorium capillifolium</i>)	Primrose (<i>Oenothera kunthiana</i>)	Wild carrot (<i>Daucus carota</i>)
Fiddleneck (<i>Amsinckia intermedia</i>)	Puncturevine (<i>Tribulus terrestris</i>)	Wild lettuce (<i>Lactuca spp.</i>)
Filaree (<i>Erodium spp.</i>)	Purple loosestrife (<i>Lythrum salicaria</i>)	Wild parsnip (<i>Pastinaca sativa</i>)
Fleabane (<i>Erigeron spp.</i>)	Purslane (<i>Portulaca spp.</i>)	Wild turnip (<i>Brassica campestris</i>)
Giant ragweed (<i>Ambrosia trifida</i>)		Woollyleaf bursage (<i>Ambrosia grayi</i>)
Goldenrod (<i>Solidago spp.</i>)		Yellow starthistle (<i>Centaurea solstitialis</i>)
		Yellow woodsorrel (<i>Oxalis stricta</i>)

WEEDS CONTROLLED

This product will provide post-emergence control and some residual control of the following target vegetation species. Degree of control is both species and rate dependent. This product must be used only in accordance with the directions for use on this label.

VINES AND BRAMBLES

The species of vines and brambles controlled by this product include the following:

Field bindweed (<i>Convolvulus arvensis</i>)	Redvine (<i>Brunnichia cirrhosa</i>)	Wild grape (<i>Vitis spp.</i>)
Hedge bindweed (<i>Calystegia sepium</i>)	Trumpet creeper (<i>Campsis radicans</i>)	Wild rose (<i>Rosa spp.</i>) ¹
Honeysuckle (<i>Lonicera spp.</i>) ¹	Virginia creeper (<i>Parthenocissus quinquefolia</i>)	Including: Multiflora rose (<i>Rosa multiflora</i>)
Morningglory (<i>Ipomoea spp.</i>)	Wild buckwheat (<i>Polygonum convolvulus</i>)	Macartney rose (<i>Rosa bracteata</i>)
Poison ivy (<i>Rhus radicans</i>)		

¹ Use higher labeled rates.





WOODY BRUSH AND TREES

The species of woody brush and trees controlled by this product include the following:

Alder (<i>Alnus spp.</i>)	<i>Populus deltoides</i>	Privet (<i>Ligustrum vulgare</i>)
American beech (<i>Fagus grandifolia</i>)	Cypress (<i>Taxodium spp.</i>)	Red alder (<i>Alnus rubra</i>)
Ash (<i>Fraxinus spp.</i>) ¹	Dogwood (<i>Cornus spp.</i>) ¹	Red maple (<i>Acer rubrum</i>)
Aspen (<i>Populus spp.</i>)	Eucalyptus (<i>Eucalyptus spp.</i>)	Saltcedar (<i>Tamarix pentandra</i>)
Autumn olive (<i>Elaeagnus umbellata</i>)	Hawthorn (<i>Crataegus spp.</i>)	Sassafras (<i>Sassafras albidum</i>)
Bald cypress (<i>Taxodium distichum</i>)	Hickory (<i>Carya spp.</i>) ¹	Sourwood (<i>Oxydendrum arboreum</i>) ²
Bigleaf maple (<i>Acer macrophyllum</i>)	Huckleberry (<i>Gaylussacia spp.</i>)	Sumac (<i>Rhus spp.</i>)
Birch (<i>Betula spp.</i>) ¹	Lyonia <i>spp.</i>	Sweetgum (<i>Liquidambar styraciflua</i>)
Black oak (<i>Quercus kelloggii</i>)	Including: Fetterbush (<i>Lyonia lucida</i>)	Sycamore (<i>Latanus occidentalis</i>)
Blackgum (<i>Nyssa sylvatica</i>) ²	Staggerbush (<i>Lyonia mariana</i>)	Tanoak (<i>Lithocarpus densiflorus</i>) ¹
Boxelder (<i>Acer negundo</i>)	Madrone (<i>Arbutus menziesii</i>)	TiTi (<i>Cyrilla racemiflora</i>) ⁵
Brazilian peppertree (<i>Schinus terebinthifolius</i>)	Maple (<i>Acer spp.</i>)	Tree of heaven (<i>Ailanthus altissima</i>)
Ceanothis (<i>Ceanothis spp.</i>)	Melaleuca (<i>Melaleuca quinquenervia</i>)	Vaccinium <i>spp.</i>
Cherry (<i>Prunus spp.</i>) ^{1,2}	Mulberry (<i>Morus spp.</i>) ^{1,3}	Including: Blueberry (<i>Vaccinium spp.</i>)
Chinaberry (<i>Melia azedarach</i>)	Oak (<i>Quercus spp.</i>) ⁴	Sparkleberry (<i>Vaccinium arboreum</i>)
Chinese tallow-tree (<i>Sapium sebiferum</i>)	Persimmon (<i>Diospyros virginiana</i>) ²	Willow (<i>Salix spp.</i>)
Chinquapin (<i>Castanopsis chrysophylla</i>)	Poison oak (<i>Rhus diversiloba</i>)	Yellow-poplar (<i>Liriodendron tulipifera</i>) ¹
Cottonwood (<i>Populus trichocarpa and</i>	Popcorn-tree (<i>Sapium sebiferum</i>)	
	Poplar (<i>Populus spp.</i>)	

¹ Use higher labeled rates.

² Best control with applications prior to formation of fall leaf color.

³ The degree of control may be species dependent.

⁴ For Water oak (*Quercus nigra*), Laurel oak (*Q. lauriflora*), Willow oak (*Q. phellos*) and Live oak (*Q. virginiana*) use higher labeled rates.

⁵ Suppression.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Do not store below 10°F.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

(This product is available in multiple containers. Follow the container disposal instructions below that apply to your container type/size).

[Nonrefillable Containers 5 Gallons or Less:] Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

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