

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.

Nufarm

POLARISTM AC

Herbicide

FOR THE CONTROL OF VEGETATION ON FORESTRY SITES

ACTIVE INGREDIENT: By Weight

Isopropylamine salt of Imazapyr: (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)* 53.1%

OTHER INGREDIENTS: 46.9%

TOTAL 100.0%

*Equivalent to 43.3% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-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 FIRST AID AND ADDITIONAL PRECAUTIONARY STATEMENTS

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

EPA REG. NO. 228-480

EPA EST. NO. 228-IL-1

MANUFACTURED FOR
NUFARM AMERICAS INC.
BURR RIDGE, ILLINOIS 60527-0866

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS CAUTION - PRECAUCION

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

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- long-sleeve shirt and long pants
- shoes plus socks

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users Should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on 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 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.
IF ON SKIN	<ul style="list-style-type: none"> • 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.

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

For terrestrial uses, Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. This herbicide is phytotoxic at extremely low concentrations. Nontarget plants may be adversely affected from drift.

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 may be used only in accordance with recommendations 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 12 hours.

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

- coveralls
- 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 (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 GENERAL INFORMATION section of this label for a description of noncrop sites. Do not enter treated areas without protective clothing until sprays have dried.

IMPORTANT

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. Prevent drift of spray to desirable plants.

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

GENERAL INFORMATION

This product is a surfactant free aqueous solution to be mixed in water and generally 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.

Continued

This product is also recommended 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 man made 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 recommendations 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 determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

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 (aircraft, 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 field, 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 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.

Managing spray drift from aerial applications: Applicators must follow these requirements to avoid off target drift movement: 1) boom length - the distance of the outermost nozzles on the boom must not exceed 3/4 the length of the rotor, 2) nozzle orientation - nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees, and 3) application height - without compromising aircraft safety, applications should be made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

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 recommended 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 recommended label rate. A foam reducing agent may be added at the recommended label rate, if needed.

IMPORTANT: 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 recommended 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 recommended label rates, if needed. If desired, a spray pattern indicator may be added at the recommended label rate.

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

IMPORTANT: 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.

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SPRAY SOLUTION MIXING GUIDE				
SOLUTION VOLUME	NUFARM POLARIS® AC CONCENTRATION (%)			SURFACTANT
	1	2.5	5	
1 gallon	1-1/3 oz	3-1/3 oz	6-2/3 oz	1/3 oz
5 gallons	6-2/3 oz	1 pint	2 pints	1-2/3 oz
10 gallons	13-1/3 oz	2 pints	4 pints	3-1/3 oz
25 gallons	2 pints	5 pints	10 pints	8 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 a 2.5% by volume spray solution is recommended.

IMPORTANT: Do not over apply causing runoff from the treated foliage. Avoid direct application to desired plant species as injury may occur. Do not exceed recommended 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 (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

Continued

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 recommended 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 recommended 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 non-ionic 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 oz of this product with 16 to 64 oz of Razor®/Razor® Pro/Foresters® Non-Selective or 16 to 48 oz of Tahoe®4E per acre. For control of seedling pines, apply 16 to 32 oz of this product with 3 to 4 quarts Razor®/Razor® Pro/Foresters® Non-Selective. For site preparation, rates less than 24 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 elliotii</i>) ¹	4 – 6
Douglas-Fir (<i>Pseudotsuga menziesii</i>) ¹	4 – 6

¹ Use 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 oz of this product and 0.2 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 oz of this product plus 1-2 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 low volume 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>)	12 – 20
Longleaf Pine (<i>Pinus palustris</i>) ³	12 – 16
Pitch Pine (<i>Pinus rigida</i>)	12 – 16
Shortleaf Pine (<i>Pinus echinata</i>)	12 – 16
Slash Pine (<i>Pinus elliotii</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 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 recommended 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 oz./A of this product after July 15. The use of rates below 16 oz./A is intended for hardwood growth suppression and some hardwood resprouting should be expected.

USE NUFARM 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 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 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 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 should be used only in accordance with the recommendations on this label.

GRASSES

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

Annual bluegrass	(<i>Poa annua</i>)
Bahiagrass	(<i>Paspalum notatum</i>)
Barnyardgrass	(<i>Echinochloa crus-galli</i>)
Beardgrass	(<i>Andropogon spp.</i>)
Bermudagrass ¹	(<i>Cynodon dactylon</i>)
Big bluestem	(<i>Andropogon gerardii</i>)
Broadleaf signalgrass	(<i>Brachiaria platyphylla</i>)
Canada bluegrass	(<i>Poa compressa</i>)
Cattail	(<i>Typha spp.</i>)
Cheat	(<i>Bromus secalinus</i>)
Cogongrass ²	(<i>Imperata cylindrica</i>)
Crabgrass	(<i>Digitaria spp.</i>)
Crowfootgrass	(<i>Dactyloctenium aegyptium</i>)
Dallisgrass	(<i>Paspalum dilatatum</i>)
Downy brome	(<i>Bromus tectorum</i>)
Fall panicum	(<i>Panicum dichotomiflorum</i>)
Feathertop	(<i>Pennisetum villosum</i>)
Fescue	(<i>Festuca spp.</i>)
Foxtail	(<i>Setaria spp.</i>)
Giant reed	(<i>Arundo donax</i>)
Goosegrass	(<i>Eleusine indica</i>)
Guineagrass	(<i>Panicum maximum</i>)
Italian ryegrass	(<i>Lolium multiflorum</i>)
Itchgrass	(<i>Rottboellia exaltata</i>)
Johnsongrass ¹	(<i>Sorghum halepense</i>)
Junglerice	(<i>Echinochloa colonum</i>)
Kentucky bluegrass	(<i>Poa pratensis</i>)
Lovegrass	(<i>Eragrostis spp.</i>)
Orchardgrass	(<i>Dactylis glomerata</i>) <i>Panicum spp.</i>
Paragrass	(<i>Brachiaria mutica</i>)
Phragmites	(<i>Phragmites australis</i>)
Prairie cordgrass	(<i>Spartina pectinata</i>)
Prairie threeawn	(<i>Aristida oligantha</i>)
Quackgrass	(<i>Agropyron repens</i>)
Reed canary grass	(<i>Phalaris arundinacea</i>)
Saltgrass	(<i>Distichlis stricta</i>)
Sand dropseed	(<i>Sporobolus cryptandrus</i>)

Continued

GRASSES (continued)

Sandbur	(<i>Cenchrus spp.</i>)
Smooth brome	(<i>Bromus inermis</i>)
Sprangletop	(<i>Leptochloa spp.</i>)
Timothy	(<i>Phleum pratense</i>)
Torpedograss	(<i>Panicum repens</i>)
Vaseygrass	(<i>Paspalum urvillei</i>)
Wild barley	(<i>Hordeum spp.</i>)
Wild oats	(<i>Avena fatua</i>)
Wirestem muhly	(<i>Muhlenbergia frondosa</i>)
Witchgrass	(<i>Panicum capillare</i>)
Woolly cupgrass	(<i>Eriochloa villosa</i>)

¹ Use higher labeled rates.

² Use minimum of 24 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>)
Broom snakeweed	(<i>Gutierrezia sarothrae</i>)
Bull Thistle	(<i>Cirsium vulgare</i>)
Burclover	(<i>Medicago spp.</i>)
Burdock	(<i>Arctium spp.</i>)
Camphorweed	(<i>Heterotheca subaxillaris</i>)
Canada thistle	(<i>Cirsium arvense</i>)
Carolina geranium	(<i>Geranium carolinianum</i>)
Carpetweed	(<i>Mullugo verticillata</i>)
Chickweed, mouseear	(<i>Cerastium vulgatum</i>)
Clover	(<i>Trifolium spp.</i>)
Cocklebur	(<i>Xanthium strumarium</i>)
Common chickweed	(<i>Stellaria media</i>)
Common ragweed	(<i>Ambrosia artemisiifolia</i>)
Cudweed	(<i>Gnaphalium spp.</i>)
Dandelion	(<i>Taraxacum officinale</i>)
Desert camelthorn	(<i>Alhagi pseudalhagi</i>)
Diffuse knapweed	(<i>Centaurea diffusa</i>)
Dock	(<i>Rumex spp.</i>)
Dogfennel	(<i>Eupatorium capillifolium</i>)
Fiddleneck	(<i>Amsinckia intermedia</i>)
Filaree	(<i>Erodium spp.</i>)
Fleabane	(<i>Erigeron spp.</i>)
Giant ragweed	(<i>Ambrosia trifida</i>)
Goldenrod	(<i>Solidago spp.</i>)
Gray rabbitbrush	(<i>Chrysothamnus nauseosus</i>)
Henbit	(<i>Lamium aplexicaule</i>)
Hoary vervain	(<i>Verbena stricta</i>)
Horseweed	(<i>Conyza canadensis</i>)
Indian mustard	(<i>Brassica juncea</i>)
Japanese bamboo/knotweed	(<i>Polygonum cuspidatum</i>)
Knotweed, prostrate	(<i>Polygonum aviculare</i>)
Kochia	(<i>Kochia scoparia</i>)
Lambsquarters	(<i>Chenopodium album</i>)
Little mallow	(<i>Malva parviflora</i>)
Milkweed	(<i>Asclepias spp.</i>)
Miners lettuce	(<i>Montia perfoliata</i>)
Mullein	(<i>Verbascum spp.</i>)
Nettleleaf goosefoot	(<i>Chenopodium murale</i>)
Oxeye daisy	(<i>Chrysanthemum leucanthemum</i>)
Pepperweed	(<i>Lepidium spp.</i>)
Pigweed	(<i>Amaranthus spp.</i>)
Plantain	(<i>Plantago spp.</i>)
Pokeweed	(<i>Phytolacca americana</i>)
Primrose	(<i>Oenothera kunthiana</i>)

Puncturevine	(<i>Tribulus terrestris</i>)
Purple loosestrife	(<i>Lythrum salicaria</i>)
Purslane	(<i>Portulaca spp.</i>)
Pusley, Florida	(<i>Richardia scabra</i>)
Rocket, London	(<i>Sisymbrium irio</i>)
Rush skeletonweed	(<i>Chondrilla juncea</i>)
Russian knapweed	(<i>Centaurea repens</i>)
Russian thistle	(<i>Salsola kali</i>)
Saltbush	(<i>Atriplex spp.</i>)
Shepherd's purse	(<i>Capsella bursa-pastoris</i>)
Silverleaf nightshade	(<i>Solanum elaeagnifolium</i>)
Smartweed	(<i>Polygonum spp.</i>)
Sorrell	(<i>Rumex spp.</i>)
Sowthistle	(<i>Sonchus spp.</i>)
Spurge, annual	(<i>Euphorbia spp.</i>)
Stinging nettle	(<i>Urtica dioica</i>)
Sunflower	(<i>Helianthus spp.</i>)
Sweet clover	(<i>Melilotus spp.</i>)
Tansymustard	(<i>Descurainia pinnata</i>)
Texas thistle	(<i>Cirsium texanum</i>)
Velvetleaf	(<i>Abutilon theophrasti</i>)
Western ragweed	(<i>Ambrosia psilostachya</i>)
Wild carrot	(<i>Daucus carota</i>)
Wild lettuce	(<i>Lactuca spp.</i>)
Wild parsnip	(<i>Pastinaca sativa</i>)
Wild turnip	(<i>Brassica campestris</i>)
Woollyleaf bursage	(<i>Ambrosia grayi</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 should be used only in accordance with the recommendations 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>)
Hedge bindweed	(<i>Calystegia sepium</i>)
Honeysuckle ¹	(<i>Lonicera spp.</i>)
Morningglory	(<i>Ipomoea spp.</i>)
Poison ivy	(<i>Rhus radicans</i>)
Redvine	(<i>Brunnichia cirrhosa</i>)
Trumpet creeper	(<i>Campsis radicans</i>)
Virginia creeper	(<i>Parthenocissus quinquefolia</i>)
Wild buckwheat	(<i>Polygonum convolvulus</i>)
Wild grape	(<i>Vitis spp.</i>)
Wild rose ¹	(<i>Rosa spp.</i>)
Including Multiflora rose	(<i>Rosa multiflora</i>)
Macartney rose	(<i>Rosa bracteata</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>)
American beech	(<i>Fagus grandifolia</i>)
Ash ¹	(<i>Fraxinus spp.</i>)
Aspen	(<i>Populus spp.</i>)
Autumn olive	(<i>Elaeagnus umbellata</i>)
Bald cypress	(<i>Taxodium distichum</i>)
Bigleaf maple	(<i>Acer macrophyllum</i>)
Birch ¹	(<i>Betula spp.</i>)
Black oak	(<i>Quercus kelloggii</i>)
Blackgum ²	(<i>Nyssa sylvatica</i>)
Boxelder	(<i>Acer negundo</i>)

Continued

WOODY BRUSH AND TREES (continued)

Brazilian peppertree	(<i>Schinus terebinthifolius</i>)
Ceanothis	(<i>Ceanothis spp.</i>)
Cherry ^{1,2}	(<i>Prunus spp.</i>)
Chinaberry	(<i>Melia azedarach</i>)
Chinese tallow-tree	(<i>Sapium sebiferum</i>)
Chinquapin	(<i>Castanopsis chrysophylla</i>)
Cottonwood	(<i>Populus trichocarpa</i> and <i>Populus deltoides</i>)
Cypress	(<i>Taxodium spp.</i>)
Dogwood ¹	(<i>Cornus spp.</i>)
Eucalyptus	(<i>Eucalyptus spp.</i>)
Hawthorn	(<i>Crataegus spp.</i>)
Hickory ¹	(<i>Carya spp.</i>)
Huckleberry	(<i>Gaylussacia spp.</i>)
Lyonia spp. Including Fetterbush Staggerbush	(<i>Lyonia lucida</i>) (<i>Lyonia mariana</i>)
Madrone	(<i>Arbutus menziesii</i>)
Maple	(<i>Acer spp.</i>)
Melaleuca	(<i>Melaleuca quinquenervia</i>)
Mulberry ^{1,3}	(<i>Morus spp.</i>)
Oak ⁴	(<i>Quercus spp.</i>)
Persimmon ²	(<i>Diospyros virginiana</i>)
Poison oak	(<i>Rhus diversiloba</i>)
Popcorn-tree	(<i>Sapium sebiferum</i>)
Poplar	(<i>Populus spp.</i>)
Privet	(<i>Ligustrum vulgare</i>)
Red alder	(<i>Alnus rubra</i>)
Red maple	(<i>Acer rubrum</i>)
Saltcedar	(<i>Tamarix pentandra</i>)
Sassafras	(<i>Sassafras albidum</i>)
Sourwood ²	(<i>Oxydendrum arboreum</i>)
Sumac	(<i>Rhus spp.</i>)
Sweetgum	(<i>Liquidambar styraciflua</i>)
Sycamore	(<i>Platanus occidentalis</i>)
Tanoak ¹	(<i>Lithocarpus densiflorus</i>)
Titi ⁵	(<i>Cyrilla racemiflora</i>)
Tree of heaven	(<i>Ailanthus altissima</i>)
<i>Vaccinium spp.</i> Including Blueberry Sparkleberry	(<i>Vaccinium spp.</i>) (<i>Vaccinium arboreum</i>)
Willow	(<i>Salix spp.</i>)
Yellow-poplar ¹	(<i>Liriodendron tulipifera</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 may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: FOR QUART, 1.0 GALLON, 2.5 GALLON, 15 GALLON AND 30 GALLON: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

CONTAINER DISPOSAL FOR FIELD KEG, MINI BULK AND BULK: When this container is empty, replace the cap and seal all openings that have been opened during use, and return the container to the point of purchase, or to a designated location. This container must only be refilled with the pesticide product. Do not reuse the container for any other purpose. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. Check for leaks after refilling and before transport.

Do not transport if this container is damaged or leaking. If the container is damaged or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of container must be in compliance with state and local regulations.

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