

PM25

241-299

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**BEST AVAILABLE COPY**PULL HERE TO OPEN  
PRESS TO RESEAL**APPLICATORS CONCENTRATE****ACTIVE INGREDIENT:**

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

**INERT INGREDIENT** . . . . . 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.

EPA Reg. No. 241-299

EPA Est. No. 5905-AR-01

**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.)

**CYANAMID**

**American Cyanamid Company**  
Agricultural Products Division  
Specialty Products Department  
Wayne, NJ 07470

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**STATEMENT OF  
PRACTICAL TREATMENT**

**IF ON SKIN:** Wash with plenty of soap and water

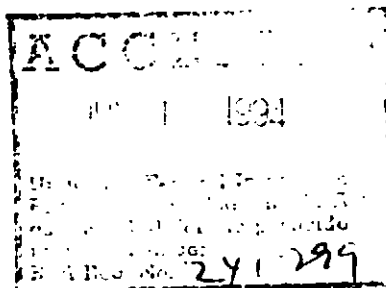
**IF IN EYES:** Flush with plenty of water. Get medical attention if irritation persists.

In case of emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.

See next page for Additional Precautionary Statements

**2/94****Net Contents: 2.5 Gallons**

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**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS**

**CAUTION!**

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

**Personal Protective Equipment (PPE):**

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- waterproof gloves
- 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:

1. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**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 ARSENAL herbicide APPLICATORS CONCENTRATE should be mixed, stored, and applied only in stainless steel, fiberglass, plastic, and plastic lined steel containers.

DO NOT mix, store, or apply ARSENAL herbicide APPLICATORS CONCENTRATE or spray solutions of ARSENAL herbicide APPLICATORS CONCENTRATE 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.

ARSENAL herbicide APPLICATORS CONCENTRATE should be used only in accordance with recommendations on the label. Keep containers closed to avoid spill and contamination.

ARSENAL herbicide APPLICATORS CONCENTRATE may be applied using helicopters, ground operated sprayers, low-volume hand-operated spray equipment such as backpack and pump-up sprayers, and tree injection equipment.

Observe all cautions and limitations in the package labels of products used in combination with ARSENAL herbicide APPLICATORS CONCENTRATE.

**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 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
- waterproof gloves
- shoes plus socks

**STORAGE AND DISPOSAL**

**PROHIBITIONS:** DO NOT store below 10°F. DO NOT contaminate water, food, or feed by storage or disposal.

**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:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**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 with ARSENAL herbicide APPLICATORS CONCENTRATE. DO NOT apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend or in locations where the 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. DO NOT USE in California.

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

**GENERAL INFORMATION**

ARSENAL herbicide APPLICATORS CONCENTRATE 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. ARSENAL herbicide APPLICATORS CONCENTRATE may be used for selective woody and herbaceous weed control in natural regeneration of certain conifers (see pine release). ARSENAL herbicide APPLICATORS CONCENTRATE is also recommended for control of undesirable vegetation along forest roads, non-irrigation ditchbanks, and the establishment and maintenance of wildlife openings. ARSENAL herbicide

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APPLICATORS CONCENTRATE may also be mixed in water and used for stump and cut-stem treatment for control of unwanted woody vegetation.

ARSENAL herbicide APPLICATORS CONCENTRATE may also be applied in forestry sites (land managed for timber production) on areas defined as puddles, ponds, bays of ditches, drainage ditches, intermittent drainage, intermittently flooded low lying sites, seasonally dry flood plains, and transitional areas between upland and lowland sites. It is permissible to treat marshes, swamps, and bogs after water has receded as well as seasonally dry flood deltas.

ARSENAL herbicide APPLICATORS CONCENTRATE 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

### HELICOPTER SPRAY EQUIPMENT:

Thoroughly mix the recommended amount of ARSENAL herbicide APPLICATORS CONCENTRATE 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 gusty conditions or when wind velocity exceeds 5 mph. Except when applying with a MICROFOIL<sup>®</sup> boom, THRU-VALVE BOOM<sup>®</sup> or other similar equipment, 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 to ensure that drift does not occur off the target area. 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 ARSENAL herbicide APPLICATORS CONCENTRATE in 10 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. 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 to ensure that drift does not occur off the target area. **HIGH VOLUME** (75 to 100 gallons per acre) APPLICATIONS ARE RECOMMENDED FOR KUDZU WEED CONTROL PROGRAMS. To avoid potential off-site damage, use the minimum gallonage appropriate for the specific application. Clean application and mixing equipment after using this product by thoroughly flushing with water.

### DIRECTED 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 ARSENAL herbicide APPLICATORS CONCENTRATE and a minimum of 1/4 percent by volume nonionic surfactant in water.

To mix the spray solution, add the volume of ARSENAL herbicide APPLICATORS CONCENTRATE and nonionic surfactant indicated in the table below to the desired amount of water.

### SPRAY SOLUTION MIXING GUIDE

| SOLUTION VOLUME | ARSENAL herbicide APPLICATORS 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 gal                                           | 2.5 gal  | 5 gal    | 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.

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

### STUMP AND CUT STEM TREATMENTS

ARSENAL herbicide APPLICATORS CONCENTRATE 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

ARSENAL herbicide APPLICATORS CONCENTRATE 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 ARSENAL herbicide APPLICATORS CONCENTRATE 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 fall 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 mix 2 quarts of ARSENAL herbicide APPLICATORS CONCENTRATE with no more than 2 quarts of water.

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 4 inches of diameter at breast height (dbh) on the target tree. For example, a 4 inch dbh tree will receive 1 injection cut and an 8 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 fall or girdle treatments, using a hatchet, machete, or similar device, make cuts through the bark at approximately equal intervals around the tree. Make at least one cut for every 4 inches of dbh on the target tree. For example, a 4 inch dbh tree will receive 1 cut and an 8 inch dbh tree will receive 2 cuts. Spray or brush the solution into each cut until thoroughly wet.

**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

ARSENAL herbicide APPLICATORS CONCENTRATE 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 Pech Hybrid                    | 24-40       |
| Longleaf Pine ( <i>Pinus palustris</i> )  | 24-40       |
| Shortleaf Pine ( <i>Pinus echinata</i> )  | 24-40       |
| Slash Pine ( <i>Pinus elliotii</i> )      | 24-40       |
| Virginia Pine ( <i>Pinus virginiana</i> ) | 24-40       |

Use the recommended rate of ARSENAL herbicide APPLICATORS CONCENTRATE 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 ARSENAL herbicide APPLICATORS CONCENTRATE per acre in 10 to 20 gallons total spray solution for helicopter applications or 10 to 40 gallons total spray solution for mechanical ground spray applications. Use a minimum of 1/2 percent by volume nonionic surfactant. Use the higher label rates of ARSENAL herbicide APPLICATORS CONCENTRATE and higher spray volumes when controlling particularly dense or multi-layered canopies of hardwood stands, or difficult to control species.

Tank mixes may be necessary for chemical control of conifers and other species tolerant to ARSENAL herbicide APPLICATORS CONCENTRATE 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 24 oz ARSENAL herbicide APPLICATORS CONCENTRATE with 16 to 64 oz Accord<sup>®</sup> or 16 to 48 oz Garlon<sup>®</sup> 4<sup>®</sup> per acre. For control of seedling pines, apply 16 to 20 oz ARSENAL herbicide APPLICATORS CONCENTRATE with 3 to 4 quarts Accord. Rates less than 24 oz ARSENAL herbicide APPLICATORS CONCENTRATE will provide suppression of hard wood brush and trees, and some resprouting may occur.

### HERBACEOUS WEED CONTROL

Use ARSENAL herbicide APPLICATORS CONCENTRATE for release of the following conifers from herbaceous competition:

| Crop Species                              | Rate (lb. G/A) |
|-------------------------------------------|----------------|
| Loblolly Pine ( <i>Pinus taeda</i> )      | 6 - 10         |
| Loblolly X Pech hybrid                    | 6 - 10         |
| Virginia Pine ( <i>Pinus virginiana</i> ) | 6 - 10         |
| Longleaf Pine ( <i>Pinus palustris</i> )  | 4 - 6          |
| Slash Pine ( <i>Pinus elliotii</i> )      | 4 - 8          |

\* Use of surfactant is not recommended.

ARSENAL herbicide APPLICATORS CONCENTRATE 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 ARSENAL herbicide APPLICATORS CONCENTRATE 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 or ground sprayer. For best results, applications should be made to newly emerged weeds. 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. At a rate not to exceed 1/4 percent of spray solution volume (except for slash and longleaf pine). Some minor conifer growth inhibition may be observed when herbaceous weed control treatments are made during periods of active conifer growth.

ARSENAL herbicide APPLICATORS CONCENTRATE 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 ARSENAL herbicide APPLICATORS CONCENTRATE 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.

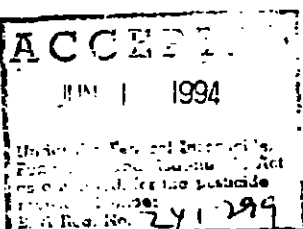
ARSENAL herbicide APPLICATORS CONCENTRATE may be tank mixed with Oust<sup>®</sup> to broaden the spectrum of weeds controlled. For loblolly pine only, apply 4 to 6 oz ARSENAL herbicide APPLICATORS CONCENTRATE plus 1.2 oz Oust (product) per acre.

### CONIFER RELEASE TREATMENTS

ARSENAL herbicide APPLICATORS CONCENTRATE may be applied as a broadcast or directed spray application for suppression of labeled brush, vine, and herbaceous weed species. Directed spray

<sup>1</sup> Trademark of Rhone-Poulenc Ag. Company  
<sup>2</sup> Trademark of Waltham Securities

<sup>3</sup> Trademark of Monsanto Company  
<sup>4</sup> Trademark of Dow Chemical Corp.  
<sup>5</sup> Trademark of E. I. duPont de Nemours & Company



Use broadcast applications of ARSENAL herbicide APPLICATORS CONCENTRATE for release of the following cinders from hardwood competition.

| Crop Species                               | Rate (lb az/A) |
|--------------------------------------------|----------------|
| Loblolly Pine ( <i>Pinus laevis</i> )      | 16-32          |
| Loblolly X. 1/4 B. hybrid                  | 16-32          |
| Virginia Pine ( <i>Pinus virginiana</i> )  | 16-32          |
| * 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          |

<sup>a</sup> Use of surfactant not recommended for slash and topical use.

Apply the recommended rate of ARSENAI herbicide APPLICATORS CONCENTRATE 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 ARSENAI herbicide APPLICATORS CONCENTRATE when controlling particularly dense stands or difficult to control species.

Some minor conifer growth inhibition may be observed when releases treatments are made during periods of active conifer growth. To minimize potential conifer growth inhibition, do not make applications to conifer stands before the end of the second growing season. To minimize potential conifer growth inhibition in conifer stands that have been established for less than one year, make releases more than two growing seasons after the last release. Conifer growth inhibition in the growing season. To prevent possible conifer injury, do not apply ARSENAH herbicide APPLICATORS CONCERN. When conifers are under stress from drought, diseases, animal or winter injury, or other stresses, herbicide conifer injury.

ARSENAL herbicide APPLICATORS CONCENTRATE may be used to release liability pine seedlings during the first growing season following planting or for one year old natural liability pine regeneration. For one year old liability pine release, apply 12 lb of ARSENAL herbicide APPLICATORS CONCENTRATE after August 15. The use of rates below 16 lb/ai is intended for hardwood growth suppression and some hardwood response should be expected.

Use ARSENAL Herbicide APPLICATIONS CONCENTRATE for spot treatment of undesirable herbaceous vegetation:

**ARSENIAL herbicide APPLICATORS CONCENTRATE** may be used as a directed foliar or injection 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 for proper use rates, equipment, and application techniques. Ensure that the maximum labeled rates per acre listed for crop species are not exceeded.

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.

**WEEDS CONTROLLED**

ARSENAL herbicide APPLICATORS CONCENTRATE will provide post emergence control and some residual control of the following target vegetation species. Degree of control is both species and rate dependent. ARSENAL herbicide APPLICATORS CONCENTRATE should be used only in accordance with the recommendations on the label.

## GRASSES

The species of annual and perennial grasses controlled by AHSE NAL herbicide APPLICATORS CONCENTRATE include the following:

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\* Differ will be covered

## BROAD LEAF WEEDS

The species of annual and perennial broadleaf weeds controlled by ARSENAL herbicide APPLICATORS CONCENTRATE include the following:

- Bull thistle (*Cirsium vulgare*)
- Murdock (*Arctium* spp.)
- Comfrey (*Officiorhiza subulnaris*)
- Canada thistle (*Cirsium arvense*)
- Canada geranium (*Geranium canadense*)
- Comfrey (*Officiorhiza verticillata*)
- Clover (*Trifolium* spp.)
- Cocklebur (*Xanthoxylum*)
- Common chickweed (*Stellaria media*)
- Common ragweed (*Ambrosia artemisiifolia*)
- Dandelion (*Taraxacum officinale*)
- Dock (*Rumex* spp.)
- Dogfennel (*Eupatorium capitatum*)
- Furze (*Ericodon* spp.)
- Flexibine (*E. novae* spp.)

### BROADLEAF WEEDS (cont'd)

Gutierrez, J. (2003). *Antropología y Etnografía*. Bogotá: Universidad Nacional de Colombia.

Galbanum (*Sotolago* spp.)  
Hairy vervain (*Verbena stricta*)  
Horsetweed (*Conyza canadensis*)  
Indian mustard (*Brassica juncea*)  
Lamb's-quarters (*Chenopodium album*)  
Little milkweed (*Milkia parviflora*)  
Mullein (*Asclepias* spp.)  
Minty lettuce (*Mentha pulegioides*)  
Mullein (*Verbascum* spp.)  
Medicinal goosefoot (*Chenopodium murale*)  
Oxeye daisy (*Chrysanthemum leucanthemum*)  
Peppercorn (*Epidendrum* spp.)  
Pigweed (*Amaranthus* spp.)  
Plantain (*Plantago* spp.)  
Polemonium (*Phytolacca americana*)  
Purshia (*Corethrobia lutea*)  
Purslane (*Porulaca* spp.)  
Smooth nightshade (*Solanum elaeagnifolium*)  
Smartweed (*Polygonum* spp.)  
Sorrel (*Rumex* spp.)  
Sunhelle (*Sonchus* spp.)  
Sunflower (*Helianthus* spp.)  
Sweet clover (*Melilotus* spp.)  
Tansy (*Thymus*) (*Thymus praenox*)  
Texas thistle (*Cirsium texanum*)  
Western ragweed (*Ambrosia psilostachya*)  
Wild carnation (*Claytonia carolin*)  
Wild lettuce (*Lactuca* spp.)  
Wild parsnip (*Pastinaca sativa*)  
Wild turnip (*Brassica campestris*)  
Woody-leaved burdock (*Ambrosia grayi*)  
Yellow thistle (*Cirsium scaberrimum*)  
Yellow woodcock (*Quercus stricta*)

## VINES AND BRAMBLES

The species of weeds and brambles controlled by ARSENAL herbicide APPLICATORS CONCENTRATE include the following:

- Feld bindweed (*Convolvulus arvensis*)
- Greenbind (*Solanum* spp.)
- Hedge bindweed (*Calyptegia sepium*)
- Honeysuckle (*Lonicera* spp.)
- \*Kudzu (*Pueraria lobata*)
- Morning glory (*Ipomoea* spp.)
- Passion vine (*Passiflora* spp.)
- Redvine (*Abrus precatorius*)
- Trumpet creeper (*Campsis radicans*)
- Virginian creeper (*Parietocissus quinquefolia*)
- Wild black vine (*Polysporum convolvulus*)
- Wild grape (*Vitis* spp.)
- \*Wild rose (*Rosa* spp.)
  - Including Multiflora rose (*Rosa multiflora*)
  - Mourning rose (*Rosa brachyactis*)

\* Difficult to control

\*\* Use a minimum of 75 GFA. Control of established weeds may require multiple applications.

**WOODY BRUSH AND TRE**

The species of woody brush and trees controlled by APPLICATORS CON-EMITATE include the following:

American beech (*Fagus grandifolia*)  
Ash (*Fraxinus* spp.)  
Alder (*Populus* spp.)  
Bald cypress (*Taxodium distichum*)  
Black maple (*Acer macrophyllum*)  
*Betula* (*Betula* spp.)  
Birch (*Betula papyrifera*)  
Blueberry (*Vaccinium*)  
Cherry (*Prunus* spp.)  
Chimney pine (*Mikania arborescens*)  
Chinese yellow tree (*Sapium sebiferum*)  
Dogwood (*Cornus* spp.)  
Hemlock (*Callalegus* spp.)  
Hickory (*Carya* spp.)  
Maple (*Acer* spp.)  
Mulberry (*Morus* spp.)  
Oak (*Quercus* spp.)  
Persimmon (*Eurodyptis virginiana*)  
Poplar (*Populus* spp.)  
Privet (*Ligustrum vulgare*)  
Red alder (*Alnus rubra*)  
Red maple (*Acer rubrum*)  
Sassafras (*Sassafras albidum*)  
Sumac (*Rhus glabra*)  
Sweetgum (*Liquidambar styraciflua*)  
Willow (*Salix* spp.)  
Yellow cedar (*Podocarpus latifolius*)

• **Deliver to market**

\*\* Best control with applications from 10 to 1500 ppm of 1-qt

\*\*\* The degree of control may be years or decades.

**DISCLAIMER**

The label instructions for the use of this product reflect those on acid use and tests. The directions are broken down into sections to make it easier to follow. However, it is impossible to list every precaution associated with use of this product. Unanticipated consequences may result because of temperature, presence of other materials, or the use of product contrary to label instructions, all of which are American Cyanamid Company. All such risks shall be borne by the user. American Cyanamid Company warrants only that this product conforms to the chemical description on the label. It is for use as a test reagent described when used in accordance with the label instructions. It is not intended for use as a reagent in the tests referred to above.

Any damages arising from a breach of this warranty shall be limited to the replacement of the product. American Cyanamid Company makes no other express or implied warranty of FITNESS FOR ANY PURPOSE.



**American Cyanamid Company**  
Agricultural Products Division  
Specialty Products Department  
Yonkers, NJ 10747

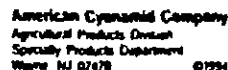
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The species of weeds and brambles controlled by ARSÉNAL herbicide APPLICATORS CONCENTRATE include the following:

Field bindweed (*Convolvulus arvensis*)  
Greenbrier (*Smilax* spp.)  
Hedge bindweed (*Calyptegia sepium*)  
Honey-suckle (*Lonicera* spp.)  
"Mullein" (*Puriana tuberosa*)  
Morning glory (*Ipomoea* spp.)  
Poison ivy (*Rhus radicans*)  
Rheum (*Rhynchospora*)  
Trumpet creeper (*Campsis radicans*)  
Virginia creeper (*Ampelopsis quinquefolia*)  
Wild buckwheat (*Polygonum convolvulus*)  
Wild grape (*Vitis* spp.)  
Wild rose (*Rosa* spp.)  
Including: Multiflora rose (*Rosa multiflora*)  
Muscadine rose (*Rosa bracteata*)

\*\* Use a minimum of 75 GPA. Control of established weeds may require multiple mowings.



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The species of maddy birds and bees controlled by ATEMA include AMERICAN CONCENTRATE such as follows:

American beech (*Fagus grandifolia*)  
 Ash (*Fraxinus* spp.)  
 Aspen (*Populus* spp.)  
 Bald cypress (*Taxodium distichum*)  
 Bayleaf maple (*Liquidambar styraciflua*)  
 Black gum (*Nyssa sylvatica*)  
 Birch (*Betula* spp.)  
 Blackberry (*Acer negundo*)  
 "Cherry" (*Prunus* spp.)  
 Chinkapin (*Castanea alacris*)  
 Chinese tallow tree (*Sapium sebiferum*)  
 Dogwood (*Cornus* spp.)  
 Hawthorn (*Crataegus* spp.)  
 Hickory (*Carya* spp.)  
 Maple (*Acer* spp.)  
 Mayberry (*Rubus* spp.)  
 Oak (*Quercus* spp.)  
 Persimmon (*Diospyros virginiana*)  
 Poplar (*Populus* spp.)  
 Privet (*Amelanchier*)  
 Red alder (*Alnus rubra*)  
 Red maple (*Acer rubrum*)  
 Sassafras (*Sassafras albidum*)  
 Sourwood (*Ostrya virginiana*)  
 Sumac (*Rhus* spp.)  
 Sweetgum (*Liquidambar styraciflua*)  
 Willow (*Salix* spp.)  
 Yellow poplar (*Liquidambar styraciflua*)

- \* Difficult to control
- \*\* Best control with applications prior to formation of full leaf canopy
- \*\*\* The degree of control may be species dependent

The label instructions for the use of this product reflect the opinion of experts in the field who use and test the device. The device may be misused. Misuse should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Irrespective of or without any unwarranted consequences may result because of such factors as weather conditions, presence of other materials, or the use or application of the product contrary to label instructions. All of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user. American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use thereon described when used in accordance with the directions for use. Subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

American Cyanamid Company makes no other express or implied warranty, including other express or implied warranty of FITNESS or of MERCHANTABILITY.



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

|                  |        |
|------------------|--------|
| IDENT INGREDIENT | 46.5%  |
| TOTAL            | 100.0% |

<sup>a</sup> Equolized to 43.3% 2-(4,5-dihydro-4-methyl-2-(1-methylallyl)-5-oxo-1H-imidazol-2-yl)-3-pyridinecarboxylic acid or 4-pyridine acid per gallon.

EPA Reg. No. 241-290 EPA Est. No. 5005-AR-01

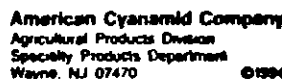
**KEEP OUT OF REACH  
OF CHILDREN  
CAUTION!  
PRECAUTION!**

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.)

**In case of emergency endangering life or property involving this product, call collect, day or night, Area Code 201-635-3700.**

**IF ON SKIN:** Wash with plenty of soap and water.

**IF IN EYES:** Flush with plenty of water. Get medical attention if irritation persists.



**Net Contents: 2.5 Gallons**

® Registered Trademark of American Cyanamid Company

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**CAUTION!**

Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist.  
See label for Worker Protection Standard (49 CFR 170) requirements.

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.

Spray solutions of ARSENAL herbicide APPLICATORS CONCENTRATE should be mixed, stored, and applied only in stainless steel, fiberglass, plastic, and plastic-lined steel containers.

DO NOT mix, store, or apply ARSENAL herbicide APPLICATIONS CONCENTRATE or spray solutions of ARSENAL herbicide APPLICATIONS CONCENTRATE in unlined steel (except stainless steel) containers or spray tanks.

It is a violation of Federal law to use this product as a dietary supplement with its labeling.

ARSENAL herbicide APPLICATORS CONCENTRATE should be used only in accordance with recommendations on the label label. Keep containers closed to avoid spills and contamination.

**ARSENAL herbicide APPLICATORS CONCENTRATE** may be applied using helicopters, ground operated sprayers, low-volume hand operated spray equipment such as back-pack and pump-up sprayers, and true injection equipment.

Observe all cautions and limitations in the package labels of products used in combination with ARSENAL herbicide APPLICATORS CONCENTRATE.

**See Inside Leading Label For Complete Directions For Use.**

**PROHIBITIONS:** DO NOT store below 18°F DO NOT contribute water  
leak, or feed by storage or disposal

**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:** Triple rinse (or equivalent). Then offer for recycling or remanufacturing, or puncture and dispose of in an approved sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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 acids to prevent unintentional exposure of desirable vegetation with ARSE MIT herbicide APPLICATORS CONCENTRATE. DO NOT apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. DO NOT seed from desirable vegetation with this product. Prevent drift of spray to desirable plants. DO NOT use in California. Check application equipment after using this product by thoroughly flushing with water.

**See Inside & Call Label For Details**

**BEST AVAILABLE**

**ACCESSION**

MAY 1 1994

U.S. DEPARTMENT OF AGRICULTURE  
NATIONAL ARCHIVES AND RECORDS ADMINISTRATION  
WASHINGTON, D.C. 20503-8700

241-299

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**FOR THE RELEASE OF ONE-YEAR-OLD  
LOBLOLLY PINE (*Pinus taeda*)**

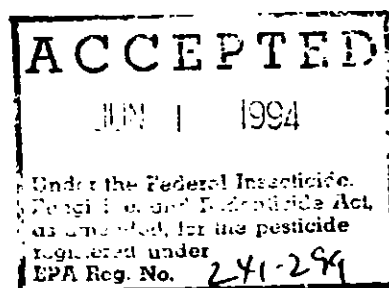
**OBSERVE ALL PRECAUTIONARY STATEMENTS IN THE  
ARSENAL HERBICIDE APPLICATORS CONCENTRATE  
LEAFLET LABEL BEFORE USING**

**DIRECTIONS FOR USE**

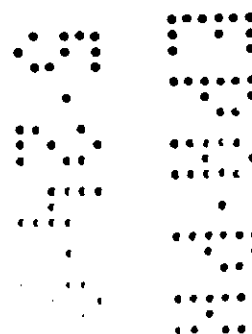
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

ARSENAL herbicide APPLICATORS CONCENTRATE 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 12-16 oz./A ARSENAL herbicide APPLICATORS CONCENTRATE after July 15. The use of rates below 16 oz./A is intended for hardwood growth suppression and some hardwood resprouting should be expected.

This label must be in the possession of the user at time of herbicide application.

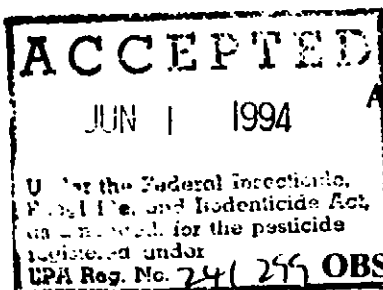


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PE-11313 5/94 SD



EPA Reg. No. 241-299

7if7



**ARSENAL HERBICIDE APPLICATORS CONCENTRATE  
PLUS ACCORD<sup>1</sup> AND GARLON 4<sup>2</sup> TANK MIXTURES  
FOR FOREST SITE PREPARATION**

**OBSERVE ALL PRECAUTIONARY STATEMENTS ON THE  
ARSENAL HERBICIDE APPLICATORS CONCENTRATE, ACCORD, AND  
GARLON 4 LABELS BEFORE USING. ALWAYS FOLLOW THE MORE  
RESTRICTIVE LABEL.**

**SITE PREPARATION TREATMENTS**

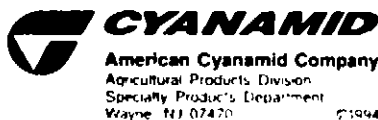
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

ARSENAL herbicide APPLICATORS CONCENTRATE 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:

|                         |                             |
|-------------------------|-----------------------------|
| Loblolly pine           | ( <i>Pinus taeda</i> )      |
| Loblolly X Pitch Hybrid |                             |
| Longleaf Pine           | ( <i>Pinus palustris</i> )  |
| Shortleaf Pine          | ( <i>Pinus echinata</i> )   |
| Slash Pine              | ( <i>Pinus elliottii</i> )  |
| Virginia Pine           | ( <i>Pinus virginiana</i> ) |

Where quick initial brown out (deadening of foliage) is desired for burning, apply a tank mixture of 16 to 32 oz. ARSENAL herbicide APPLICATORS CONCENTRATE with 16 to 64 oz. Accord or 16 to 48 oz. Garlon 4 per acre. For control of seedling pines, apply 16 to 32 oz. ARSENAL herbicide APPLICATORS CONCENTRATE with 3 to 4 quarts Accord. Rates less than 24 oz. ARSENAL herbicide APPLICATORS CONCENTRATE will provide suppression of hardwood brush and trees, and some resprouting may occur.

This label must be in the possession of the user at time of herbicide application.



<sup>1</sup>Trademark of Monsanto Company

<sup>2</sup>Trademark of Dow-Elanco Corp.

\*Registered Trademark of American Cyanamid Company

