

ARSENAL

herbicide

ACTIVE INGREDIENT:

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

INERT INGREDIENTS

TOTAL

27.6%
72.4%
100.0%

*Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon

EPA Reg. No. 241-273

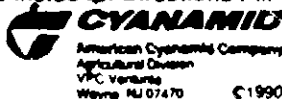
EPA Est. No. 5905-AR-01

**KEEP OUT OF REACH OF CHILDREN
CAUTION!; PRECAUCION!**

PRECAUCION AL USUARIO: Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente

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

See inside for additional Precautionary Statements
See inside for Directions For Use.



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Net Contents: 30 Gallons

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BEST AVAILABLE COPY

1/90 INTEG

NOTICIA
LABELING
PER PRÁCTICA
DATE APR 3 1990



...ing. Remove contaminated clothing and wash before reuse

FIRST AID

IF ON SKIN: Wash with plenty of soap and water

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

PHYSICAL AND CHEMICAL HAZARDS

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

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

ENVIRONMENTAL HAZARDS

DO NOT apply directly to water or wetlands. DO NOT contaminate water when disposing of equipment washwaters

IMPORTANT

DO NOT use on food or feed crops. **DO NOT** treat irrigation ditches. Keep from contact with fertilizers, insecticides, fungicides and seeds. **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** use on lawns, walks, driveways, tennis courts, or similar areas. **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 is an aqueous solution containing surfactant to be mixed in water and applied as a spray for control of most annual and perennial grasses and broad leaf weeds on noncropland areas

ARSENAL may be applied either preemergence or postemergence to the weeds, however, postemergence application is the method of choice in most situations, particularly for control of perennials. For maximum activity,

stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated to and kills, underground storage organs, thus preventing regrowth. Chlorosis and tissue necrosis may not be present in some plant species until two weeks after application. Complete kill of plants may not occur for several weeks

DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on field use and tests. These directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate risks inherently associated with use of this product. Ineffectiveness or other unintended 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 uses therein 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, 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

DIRECTIONS FOR USE

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

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

A postemergence use of ARSENAL is recommended for control of most annual and perennial grasses and broad leaf weeds on noncropland areas such as railroad, utility pipeline and highway rights-of-way, utility plant sites

DO NOT USE

added at the rate of 1 quart per 100 gallons of spray solution to provide optimum wetting and/or contact activity. A foam reducing agent may be added at the recommended label rate, if needed. If desired, a spray pattern indicator may be added at the recommended label rate.

To mix the spray solution, determine the proper ARSENAL pints per acre rate from the "WEEDS CONTROLLED" section of this label and mix according to the table below.

SPRAY SOLUTION MIXING GUIDE

SPRAY VOLUME (GAL/ACRE)	PINTS ARSENAL TO MIX PER 100 GALLONS WATER			
	3 PTS/ACRE	4 PTS/ACRE	5 PTS/ACRE	6 PTS/ACRE
50	6	8	10	12
100	3	4	5	6
150	2	2-3/4	3-1/4	4

IMPORTANT: DO NOT exceed recommended dosage rate per acre. DO NOT side-trim desirable vegetation with this product. Clean application equipment after using this product by thoroughly flushing with water.

*Registered Trademark of Chevron Chemical Company

FOR CONTROL OF UNDESIRABLE WEEDS IN UNIMPROVED BERMUDAGRASS AND BAHIAGRASS

For use on unimproved bermudagrass and bahiagrass turf such as roadsides, utility rights-of-way and other noncropland industrial sites. The application of ARSENAL on established common and coastal bermudagrass and bahiagrass provides control of labeled broadleaf and grass weeds. Competition from these weeds is eliminated, releasing the bermudagrass and bahiagrass. Treatment of bermudagrass with ARSENAL results in a compacted growth habit and seedhead inhibition.

Uniformly apply with properly calibrated ground equipment using at least 10 gallons of water per acre with a spray pressure 20 to 50 psi.

DOSAGE RATES AND TIMING

EARLY SPRING - DORMANT Apply ARSENAL at 6 to 12 fluid oz per acre for bermudagrass, and 4 to 8 fluid oz per acre for

beastlaw (*Galium* spp.)
 Bishopweed (*Ptilimnium capillare* m)
 Buttercups (*Ranunculus* spp.)
 Carolina geranium (*Geranium carolinianum*)
 Fescue (*Festuca* spp.)
 Foxtail (*Setaria* spp.)
 Little barley (*Hordeum pusillum*)
 Seedling Johnsongrass (*Sorghum halepense*)
 Wild carrot (*Daucus carota*)
 White clover (*Trifolium repens*)
 Yellow woodsorrel (*Oxalis stricta*)

- DO NOT APPLY to grass during its first growing season.
- DO NOT APPLY to grass that is under stress from drought, disease, insects, or other causes.
- Temporary yellowing of grass may occur when treatment is made after growth commences.
- DO NOT add a surfactant.

FOR CONTROL OF UNDESIRABLE WEEDS UNDER PAVED SURFACES

ARSENAL herbicide can be used under asphalt, pond liners and other paved areas. ONLY in industrial sites or where the pavement is a suitable barrier along the perimeter that prevents encroachment of roots of desirable plants.

ARSENAL should be used only where the area to be treated has been prepared according to good construction practices. If rhizomes, stolons, tubers or other vegetative plant parts are present in the site, they should be removed by scalping with a grader blade to a depth sufficient to insure their complete removal.

APPLICATION DIRECTIONS

Applications should be made to the soil surface only when final grade is established. Do not move soil following ARSENAL application.

Uniformly apply ARSENAL to the area to be surfaced, including the shoulder areas at a rate of 6 pints per acre.

Apply ARSENAL in sufficient water (at least 100 gal per acre) to insure thorough wetting of the soil surface. Add the recommended amount of ARSENAL to clean water in the spray tank during the filling operation. Agitate before spraying.

For Herbicide Activation:

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On Moist Subsoils: Apply ARSENAL after final grading and immediately before laying asphalt or liner surface. Apply uniformly, using at least 100 gallons of water per acre.

If Moisture Is Not Present: Incorporation of ARSENAL is needed for herbicide activation. ARSENAL can be incorporated into the soil to a depth of 4 to 6 inches using a rototiller or disc. Rainfall or irrigation of 1 inch will also provide uniform incorporation. Do not allow treated soil to wash or move into untreated areas.

IMPORTANT

Paving should follow ARSENAL applications as soon as possible. DO NOT apply where the chemical may contact the roots of desirable trees or other plants

The product is not recommended for use under pavement on residential properties such as driveways or parking lots, nor is it recommended for use in recreational areas such as under bike or jogging paths, golf cart paths, or tennis courts, or where landscape plantings could be anticipated

Injury or death of desirable plants may result if this product is applied where roots are present or where they may extend into the treated area. Roots of trees and shrubs may extend a considerable distance beyond the branch extremities or drip line

WEEDS CONTROLLED

ARSENAL herbicide will provide postemergence control with residual control of the following target vegetation species at the rates listed. Residual control refers to control of newly germinating seedlings in both annuals and perennials. In general, annual weeds may be controlled by postemergence or preemergence applications of ARSENAL, whereas, for established biennials and perennials postemergence applications of ARSENAL are recommended. ARSENAL herbicide should be used only in accordance with the recommendations on this label and the leaflet label

GRASSES		
COMMON NAME	SPECIES	GROWTH HABIT ²
Apply 2-3 pints per acre ¹		
Annual bluegrass	(<i>Poa annua</i>)	A
Broadleaf signalgrass	(<i>Bracharia platyphylla</i>)	A
Canada bluegrass	(<i>Poa compressa</i>)	P
Downy brome	(<i>Bromus tectorum</i>)	A
Fescue	(<i>Festuca spp.</i>)	A/P
Foxtail	(<i>Setaria spp.</i>)	A
Italian ryegrass	(<i>Lolium multiflorum</i>)	A

GRASSES		
COMMON NAME	SPECIES	GROWTH HABIT ²
Apply 2-3 pints per acre ¹		
Johnsongrass	(<i>Sorghum halepense</i>)	P
Kentucky bluegrass	(<i>Poa pratensis</i>)	P
Lovegrass	(<i>Eragrostis spp.</i>)	A/P
Orchardgrass	(<i>Dactylis glomerata</i>)	P
Paragrass	(<i>Bracharia mutica</i>)	P
Quackgrass	(<i>Agropyron repens</i>)	P
Sandbur	(<i>Cenchrus spp.</i>)	A
Sand dropseed	(<i>Sporobolus cryptandrus</i>)	P
Smooth brome	(<i>Bromus inermis</i>)	P
Vaseygrass	(<i>Paspalum urvillei</i>)	P
Wild oats	(<i>Avena fatua</i>)	A
Witchgrass	(<i>Panicum capillare</i>)	A
Apply 3-4 pints per acre ¹		
Beardgrass	(<i>Andropogon spp.</i>)	P
Cheat	(<i>Bromus secalinus</i>)	A
Crabgrass	(<i>Digitaria spp.</i>)	A
Fall panicum	(<i>Panicum dichotomiflorum</i>)	A
Goosegrass	(<i>Eleusine indica</i>)	A
Prairie threeawn	(<i>Aristida oligantha</i>)	P
Reed canarygrass	(<i>Phalaris arundinacea</i>)	P
Torpedograss	(<i>Panicum repens</i>)	P
Wild barley	(<i>Hordeum spp.</i>)	A
Apply 4-6 pints per acre ¹		
Bahiagrass	(<i>Paspalum notatum</i>)	P
Bermudagrass	(<i>Cynodon dactylon</i>)	P
Big bluestem	(<i>Andropogon gerardii</i>)	P
Cattail	(<i>Typha spp.</i>)	P
Cogongrass	(<i>Imperata cylindrica</i>)	P
Dallisgrass	(<i>Paspalum dilatatum</i>)	P
Feathertop	(<i>Pennisetum villosum</i>)	P
Guineagrass	(<i>Panicum maximum</i>)	P
Phragmites	(<i>Phragmites australis</i>)	P

COMMON NAME		S
Apply		
Prarie cordgrass	(
Saltgrass	(
Timothy	(
Wirestem muhly	(
BROA		
COMMON NAME		S
Apply		
Burdock	(
Camphorweed	(
Carpetweed	(
Carolina geranium	(
Clover	(
Common chickweed	(
Common ragweed	(
Dandelion	(
Dogfennel	(
Filaree	(
Fleabane	(
Hoary vervain	(
Horseweed	(
Indian mustard	(
Lambsquarters	(
Lespedeza	(
Miners lettuce	(
Mullein	(
Nettleleaf goosefoot	(
Oxeye daisy	(
Pepperweed	(
Pigweed	(
Plantain	(

BROADLEAF WEEDS		
COMMON NAME	SPECIES	GROWTH HABIT ¹
Apply 4-3 pints per acre ¹		
Giant ragweed	(<i>Ambrosia trifida</i>)	A
Japanese bamboo	(<i>Polygonum cuspidatum</i>)	P
Little mallow	(<i>Malva parviflora</i>)	B
Milkweed	(<i>Asclepias spp.</i>)	P
Primrose	(<i>Oenothera biennis</i>)	P
Russian knapweed	(<i>Centaurea repens</i>)	P
Silene nightshade	(<i>Solanum elaeagnifolium</i>)	P
Sowthistle	(<i>Sonchus spp.</i>)	A
Texas thistle	(<i>Cirsium texanum</i>)	P

VINES AND BRAMBLES		
COMMON NAME	SPECIES	GROWTH HABIT ¹
Apply 1 pint per acre		
Field bindweed	(<i>Convolvulus arvensis</i>)	P
Hedge bit weed	(<i>Calystegia sepium</i>)	A
Apply 2-3 pints per acre ¹		
Wild buckwheat	(<i>Polygonum convolvulus</i>)	P
Apply 3-4 pints per acre ¹		
Greenbriar	(<i>Smitia spp.</i>)	P
Honeysuckle	(<i>Lonicera spp.</i>)	P
Morning glory	(<i>Ipomoea spp.</i>)	A, P
Poison ivy	(<i>Rhus radicans</i>)	P
Redvine	(<i>Bignonia unguis-cati</i>)	P
Wild rose including	(<i>Rosa spp.</i>)	P
Multiflora rose	(<i>Rosa multiflora</i>)	P
Macartney rose	(<i>Rosa bracteata</i>)	P

Apply 4-6 pints per acre ¹		
Blackberry	(<i>Rubus spp.</i>)	P
Dewberry	(<i>Rubus spp.</i>)	P
Kudzu	(<i>Pueraria lobata</i>)	P

VINES AND BRAMBLES		
COMMON NAME	SPECIES	GROWTH HABIT ¹
Apply 4-6 pints per acre ¹		
Trumpet creeper	(<i>Campsis radicans</i>)	P
Virginia creeper	(<i>Parthenocissus quinquefolia</i>)	P
Wild grape	(<i>Vitis spp.</i>)	P

BRUSH SPECIES		
COMMON NAME	SPECIES	GROWTH HABIT ¹
Apply 4-6 pints per acre ¹		
American beech	(<i>Fagus grandifolia</i>)	P
Ash	(<i>Fraxinus spp.</i>)	P
Bald cypress	(<i>Taxodium distichum</i>)	P
Bigleaf maple	(<i>Acer macrophyllum</i>)	P
Black gum	(<i>Nyssa sylvatica</i>)	P
Boxelder	(<i>Acer negundo</i>)	P
Cherry	(<i>Prunus spp.</i>)	P
Chinaberry	(<i>Melia azadirachta</i>)	P
Chinese tallow tree	(<i>Sapium sebiferum</i>)	P
Dogwood	(<i>Cornus spp.</i>)	P
Hawthorn	(<i>Crataegus spp.</i>)	P
Hickory	(<i>Carya spp.</i>)	P
Maple	(<i>Acer spp.</i>)	P
Mulberry	(<i>Morus spp.</i>)	P
Oak	(<i>Quercus spp.</i>)	P
Persimmon	(<i>Diospyros virginiana</i>)	P
Poplar	(<i>Populus spp.</i>)	P
Privet	(<i>Ligustrum vulgare</i>)	P
Russian olive	(<i>Elaeagnus angustifolia</i>)	P
Red alder	(<i>Alnus rubra</i>)	P
Red maple	(<i>Acer rubrum</i>)	P
Rubber rabbitbrush	(<i>Chrysothamnus nauseosus</i>)	P
Silverdollar	(<i>Tamarix ramosissima</i>)	P
Sassaparilla	(<i>Sarsaparilla albidum</i>)	P

BRUSH SPECIES		
COMMON NAME	SPECIES	GROWTH HABIT ¹
Apply 4-6 pints per acre ¹		
Sourwood	(<i>Oxydendrum arboreum</i>)	P
Sumac	(<i>Rhus spp.</i>)	P
Sweet gum	(<i>Liquidambar styraciflua</i>)	P
Willow	(<i>Salix spp.</i>)	P
Yellow poplar	(<i>Liriodendron tulipifera</i>)	P

The higher rates should be used where heavy or well established infestations occur.
 Growth Habit: A - Annual; B - Biennial; P - Perennial.
 For best results early post-emergence applications are required.
¹The degree of control is species dependent. Some *Rubus* species may not be completely controlled.
 Use a minimum of 15 gal/A. Control of established stands may require repeat applications.

CYANAMID
 American Cyanamid Company
 Agricultural Division
 VPC Ventures
 Wayne, NJ 07470 1990

NOTE: Controlled by the following Patents: U.S.A. 4,744,171; 4,815,471; 4,815,472; Canada 1,227,199 and others.



ACTIVE INGREDIENTS:
 Isopropylamine salt of triazopyr (2-[4,5-dihydro-4-methyl-4-(1-methyl-2-methyl-5-oxo-1H-imidazo[2,1-b]3-pyridine-2-yl)-3-pyridinecarboxylic acid]) 27.6%
 pyridinecarboxylic acid 72.4%
TOTAL 100.0%
 (Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methyl-2-methyl-5-oxo-1H-imidazo[2,1-b]3-pyridinecarboxylic acid) 2-pyridinecarboxylic acid per gallon)
 EPA Reg. No. 241-273 EPA Est. No. 5905-AK-81

KEEP OUT OF REACH OF CHILDREN CAUTION!

PRECAUCION AL USUARIO:
 Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

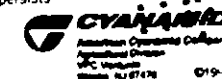
In case of emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS

Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

FIRST AID

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: 30 Gallons 22699-05
 See back of label for other information. © 1990

PHYSICAL AND CHEMICAL HAZARD:
 Spray solutions of ARSENAL should be applied only in stainless steel, fiberglass, or lined steel containers.
 DO NOT mix, store or apply ARSENAL in ARSENAL in unlined steel (except stainless or spray tanks).

ENVIRONMENTAL HAZARD:
 DO NOT apply directly to water or wetland. Terminate water when disposing of equipment.

IMPORTANT:
 DO NOT use on food or feed crops. DO NOT drench. Keep from contact with fertilizers, pesticides and seeds. DO NOT apply or drain on or near desirable trees or other plants. Their roots may extend or in locations where they are washed or moved into contact with them on lawns, walks, driveways, tennis courts, or NOT side trim desirable vegetation with the drift of spray to desirable plants. DO NOT U Clean application equipment after using thoroughly flushing with water.

DIRECTIONS FOR USE:
 It is a violation of Federal law to use this product inconsistent with its labeling.
 ARSENAL herbicide should be used only in accordance with the label. Do not apply to areas where it is not registered. Do not apply to areas where it is not registered. Do not apply to areas where it is not registered.
 A post-emergence use of ARSENAL is recommended on most annual and perennial grasses and non-cropland areas such as railroad, utility, way rights-of-way, utility plant sites, pet-pumping installations, fence rows, storage, non-ditchbanks, and other similar areas. ARSENAL is not intended for the establishment and maintenance of improved bermudagrass (see specific label directions for use inside label).

STORAGE AND DISPOSAL:
 PROHIBITIONS: DO NOT store below 10° Fahrenheit. Do not store in areas where it may be exposed to fire or other sources of heat. Do not store in areas where it may be exposed to fire or other sources of heat.
 PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved disposal facility.
 CONTAINER DISPOSAL: Triple rinse (or offer for recycling or reconditioning or put in an approved sanitary landfill, or by other means approved by state and local authorities) before recycling, reuse, or disposal.
 See Disclaimers inside label.