

US ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES PROGRAMS
REGISTRATION DIVISION (75-767)
WASHINGTON, DC 20460

EPA REGISTRATION NO.

557-2016

DATE OF ISSUANCE
MAR 06 1996

TERM OF ISSUANCE

Unconditional

NOTICE OF PESTICIDE: REGISTRATION
 REREGISTRATION

(Under the Federal Insecticide, Fungicide,
and Rodenticide Act, as amended)

NAME OF PESTICIDE PRODUCT

acos Crabgrass Preventer with 0.300%
Larricide Free Emergence Herbicide

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Vigoro Industries, Inc.
2017 W. Highway 50
P.O. Box 4139
Fairview Heights, IL 62208-4139

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is registered in accordance with FIFRA section 6(d)(5), provided that you:

1. that you add to page 5 of the enclosed stamped label the same map that was accepted on Jan 11, 1995 for this pesticide product registration.
2. that you add as an additional page to the enclosed stamped label that reflects the same "Limitation of Warranty and Limitation of Liability" statements as were accepted Jan. 11, 1995 for this pesticide product registration.
3. submit one (1) copy of the final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

James L. Miller
Product Manager (25)
Fungicide-Herbicide Branch
Registration Division (75-767)

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

BEST AVAILABLE COPY

MAR 06 1996

**KOOS CRABGRASS PREVENTER WITH 0.383%
BARRICADE PREEMERGENCE HERBICIDE**

ACTIVE INGREDIENT:

Prodiamine: [N³,N³-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine0.383%

INERT INGREDIENTS:99.617%

TOTAL:100.0%

Guaranteed Fertilizer Analysis:

Nitrogen 32 % (N)
Phosphorus 4 % (P₂O₅)
Potassium 6 % (K₂O)

Nitrogen from: Urea formaldehyde, Urea, Ammonia

**ACCEPTED
with COMMENTS
In EPA Letter Dated
MAR 06 1996
Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
557-2016**

For selective preemergence control of grass and broadleaf weeds in:

- established turf grasses (excluding golf course putting greens) and lawns
- landscape ornamentals (including established perennials & wildflower plantings)

KEEP OUT OF REACH OF CHILDREN

CAUTION

See the following section, Precautionary Statements, Hazards To Humans and Domestic Animals, for additional information.

Net Weight:

EPA Reg. No. 557-2016

EPA Est. No.

Vigoro Industries, Inc.
P.O. Box 4139
Fairview Heights, IL 62208

BARRICADE® is a Registered Trademark of Sandoz, Ltd.

3915
1

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Causes moderate eye injury (irritation). Harmful if inhaled or absorbed through the skin. Avoid contact with skin, eyes, or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling. Prolonged or frequently repeated skin contact while handling the material may cause allergic reactions in some individuals.

Statements of Practical Treatment

If in eyes: Flush thoroughly with water for several minutes. Get medical attention if irritation persists.

If on skin: Wash with soap and water. Rinse thoroughly. Get medical attention if irritation persists.

If inhaled: Remove victim to fresh air.

Environmental Hazards

This product has low solubility in water. At the limits of solubility, this product is not toxic to fish. However, at concentrations above the level of water solubility, it may be toxic to fish. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not contaminate water when disposing of equipment washwaters.

STORAGE AND DISPOSAL

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

STORAGE

Store in original container away from other fertilizer, feed, or food stuffs and separated from other pesticides.

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

Paper containers: Completely empty container into application equipment. Then dispose of empty container in a sanitary landfill or at an incineration facility, or; if allowed by state and local authorities, by burning locally. If burned, stay out of smoke.

5/15
1

DIRECTIONS FOR USE

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

This product is a selective preemergence herbicide that provides residual control of many grass and broadleaf weeds in

- established turf grasses (excluding golf course putting greens) and lawns
- landscape ornamentals
- established perennials & wildflower plantings

This product controls susceptible weeds by inhibiting weed seeds germination and root development. Most effective weed control will be obtained when this product is activated by at least 0.5 inch of rainfall or irrigation prior to weed seed germination and within 14 days following application.

Not for use on plants being grown (1) for sale or other commercial use, (2) for commercial seed production, or (3) for research purposes. For use on plants intended for aesthetic purposes or climatic modification and being grown in ornamental gardens or parks, or on golf courses or lawns and grounds.

Do not graze or feed livestock forage cut from areas treated with this product.

Do not apply this product through any type of irrigation system.

Do not apply aurally.

Do not apply to golf course putting greens.

Application Directions

Apply uniformly through suitable, calibrated commercial application equipment.

ESTABLISHED TURF:

This product is a selective preemergence herbicide that, when properly applied, will control certain grass and broadleaf weeds in established turf grasses and lawns. The maximum amount of this product that may be applied per year is given for each turf grass species in the **Maximum Annual Rates** section of this label.

Most effective weed control in turf grasses will be obtained when this product is activated by at least 0.5 inch of rainfall or irrigation prior to weed seed germination and within 14 days following application. See the map below for approximate crabgrass seed germination dates.

CRABGRASS SEED GERMINATION DATES

Approximate Date

Use Precautions

The following precautions apply to the use of this product in turf grasses and lawns:

Application of this product may thin emerged annual bluegrass and newly overseeded grasses.

Do not apply to overseeded turf within 60 days after seeding or until after the second mowing, whichever is longer. Injury to desirable seedlings is likely if this product is applied before seedling secondary roots are in the second inch of soil, not thatch plus soil.

Do not cut treated sod before 120 days after application. Do not apply to newly set sod until the following year.

Application of this product to turf stressed by drought, low fertility, or pest damage may result in turf injury.

Disturbing the herbicide barrier with cultural practices such as disking may result in reduced weed control.

Do not apply this product to putting greens or areas where dichondra, colonial bentgrass, velvet bentgrass or annual bluegrass (*Poa annua*) are desirable species.

Rates of Application

This product may be applied as a single application or in sequential applications to control weeds germinating throughout the year. All applications must be made prior to germination of the target weeds. This product will not control established weeds.

Maximum use rate selection should be based on turf species. The length of time of residual weed control provided by this product is related to the rate applied.

Maximum Annual Rates

This product is recommended for use on the turf grass species listed in the following table. Do not exceed the maximum yearly rate as given in the following table:

MAXIMUM APPLICATION RATE/CALENDAR YEAR of KOOS CRABGRASS PREVENTER² WITH 0.383% BARRICADE PREEMERGENCE HERBICIDE¹ by Turf Grass Species¹		
Turf Species:	lb KOOS CRABGRASS PREVENTER 0.383%/A	lb ai/A
Bermudagrass ² Bahigrass Centipedegrass Seashore Paspalum St. Augustinegrass ³ Tall Fescue (including turf-type) Zoysia	392	1.5
Buffalograss Kentucky Bluegrass Perennial Ryegrass	260	1.0
Creeping Red Fescue	195	0.75
Creeping Bentgrass	170	0.65

These are the maximum rates per calendar year by species limitations.

² May be used on newly sprigged or plugged Bermudagrass at rates not to exceed 136 lb/A. Newly sprigged or plugged Bermudagrass stolon rooting may be temporarily retarded. Suppression only of Foxtail, Goosegrass and Rescuegrass due to reduced product rates used in sprigging situations.

³ Use at an initial rate of 195 to 260 lb/A per application followed by sequential applications at doses that would not exceed the maximum annual application rate of 392 lb/A/yr.

- Do not apply more than 392 lb of this product per calendar year.
- Use higher rates of this product to achieve higher levels of fertility and weed control for each turf type.

Weeds Controlled

When used in accordance with this label this product will provide control of the following weeds:

- | | |
|--|---------------------------------|
| Barnyardgrass | Carpetweed |
| Bluegrass, Annual (<i>Poa annua</i>) | Chickweed, Common |
| Crabgrass (Large, Smooth) | Chickweed, Mouseear (from seed) |
| Crowfootgrass | Henbit |
| Cupgrass, Woolly | Knotweed |
| Foxtails, Annual | Kochia |
| Goosegrass ¹ | Lambsquarter, Common |
| Itchgrass | Pigweed |
| Johnsongrass (from seed) | Purslane, Common |
| Junglerice | Pusley, Florida |
| Lovegrass | Shepherd's Purse ² |
| Panicum (Texas, Fall, Browntop) | Speedwell, Persian |
| Rescuegrass ³ | Spurge, Prostrate |
| Signalgrass, Broadleaf | Woodsorrel, Yellow (from seed) |
| Sprangletop | |
| Witchgrass | |

¹ In many areas a single application of 170 to 392 lb/A of this product will control goosegrass. However, under heavy goosegrass pressure and/or an extended growing season, most effective weed control may be obtained by making an initial application of 170 to 260 lb/A followed after 60 to 90 days by a second application at doses that would not exceed those given in the **Maximum Annual Rate Table**. Do not exceed the maximum rate for turf grass species listed in the **Maximum Annual Rate Table** above.

² Applications for this weed should be made in late summer, fall or winter prior to germination.

³ Suppression only.

Sequential applications may be made so long as the total amount of product applied does not exceed the maximum annual application rates recommended for each turf species. All applications must be made prior to germination of the weed seeds.

WHEN TO APPLY AFTER OVERSEEDING TURF

Do not apply to overseeded turf within 60 days after seeding or until after the second mowing, whichever is longer. Injury to desirable seedlings is likely if BARRICADE is applied before seedling secondary roots are in the second inch of soil, not thatch plus soil.

WHEN TO OVERSEED AFTER APPLICATION

BARRICADE will inhibit the germination of turf species if overseeded too soon after application. Follow rates and intervals in the table below for best overseeding/reseeding results.

KOOS CRABGRASS PREVENTER 0.383% Rate (lb/A)		Interval Before Overseeding		
Product	ai	North	Transition	South
130	.50	4 mo	4 mo	4 mo
170	.66	5 mo	4 mo	4 mo
195	.74	6 mo	5 mo	5 mo
210	.80	---	6 mo	6 mo
260	1.00	---	7 mo	7 mo
298	1.14	---	---	9 mo
340	1.30	---	---	10 mo

LANDSCAPE ORNAMENTALS (including Established Perennials and Wildflower Plantings)

This product may be applied for residual preemergence weed control in ornamentals.

Use Rates

Apply this product at 170 to 392 lb/A in fall and/or spring. Use higher rates of application for longer control periods. Sequential or single applications are allowed so long as the total amount of product applied does not exceed the maximum annual application rate of 392 lb/A/yr.

Application Timing and Information

This product may be applied to newly transplanted and established ornamentals as a broadcast, over the top or directed application. Irrigation or rainfall soon after application will wash residues off plant foliage and activate this product in the soil.

This product may be applied at any time to established plants. Delay application to allow soil to settle around new transplants and water thoroughly before applying this product. Apply this product after cuttings form roots and become established. Apply before budding/grafting or after buds/grafts have taken to avoid any inhibition of the tissue union.

This product is a preemergence herbicide and will not control emerged weeds. Most effective weed control in ornamentals will be obtained when this product is activated by at least 0.5 inch of rainfall or irrigation, or with shallow (1 to 2 inch) mechanical incorporation, prior to weed seed germination and within 14 days following application.

Best weed control is obtained when this product is applied to soil free of clods, weeds, and debris such as leaves. Prior to application of this product, control existing vegetation by hand weeding, cultivation or the use of an appropriate postemergence herbicide.

Tolerant Ornamental Species

This product will not harm most ornamental trees, shrubs and flowers. The species listed below are tolerant to this product. Best results will be obtained when this product is uniformly applied to the soil surface; avoid applying to ornamental shoots which may defeat the effort to get uniform distribution on the soil surface. This product may be applied over the top of these species without injury.

Scientific name -----	Common name -----
<i>Abies</i> spp.	Fir species** (Balsam, Fraser, Noble, etc.)
<i>Acer palmatum</i>	Japanese Maple
<i>A. platanoides</i>	Norway Maple
<i>Actinidia chinensis</i>	Kiwi*
<i>Agapanthus africanus</i>	Lily-of-the-Nile (African Lily)
<i>Arctostaphylos densiflora</i>	Vine Hill Manzanita
<i>Arctotheca calendula</i>	Cape Weed
<i>Aucuba japonica</i>	Japanese Aucuba
<i>Barberis gladwynensis</i>	Barberry
<i>B. julianae</i>	Wintergreen Barberry
<i>B. mentorensis</i>	Mentor Barberry
<i>B. thunbergii</i>	Japanese Barberry
<i>B. verruculosa</i>	Warty Barberry
<i>Buxus microphylla</i>	Japanese Boxwood
<i>Callistemon viminalis</i>	Weeping Bottlebrush
<i>Calluna vulgaris</i>	Scotch Heather
<i>Carpobrotus edulis</i>	Hottentot Fig (Ice Plant)
<i>Cassia artemisoides</i>	Feathery Cassia
<i>Ceanothus rigidus</i>	Wild Lilac
<i>Chamaecyparis pisifera</i>	False Cypress
<i>Cleyera japonica</i>	Cleyera
<i>Citrus</i> spp.	Citrus species*
<i>Cornus florida</i>	Flowering Dogwood
<i>C. stolonifera</i>	American Dogwood
<i>Cortaderia selloana</i>	Pampas Grass
<i>Cotoneaster apiculatus</i>	Cranberry Cotoneaster
<i>C. buxifolius</i>	Cotoneaster
<i>C. dammeri</i>	Bearberry Cotoneaster
<i>C. microphyllus</i>	Rockspray Cotoneaster
<i>Cretægus</i> spp.	Hawthorne
<i>Cupressus sempervirens</i>	Italian Cypress
<i>Delasperma alba</i>	White Trailing Ice Plant

*Ornamental species only. Do not use on food producing trees or vines.

**For use on landscape ornamental sites.

Scientific name	Common name
-----	-----
<i>Dodonea viscosa</i>	Hop Bush
<i>Elaeagnus pungens</i>	Silverberry
<i>Euonymus fortunei</i>	Wintercreeper
<i>E. japonica</i>	Japanese Spindle Tree (Evergreen Euonymus)
<i>E. kiautschovica</i>	Spreading Euonymus
<i>Fatsia japonica</i>	Japanese Aralia
<i>Forsythia intermedia</i>	Border Forsythia
<i>F. viridissima</i>	Greenstem Forsythia
<i>Gardenia jasminoides</i>	Gardenia, Cape-Jasmine
<i>Gladiolus</i> spp.	Gladiolus species**
<i>Hedera helix</i>	English Ivy
<i>Hibiscus</i>	Rose of Sharon**
<i>Hibiscus rosa-sinensis</i>	Chinese Hibiscus
<i>Ilex cornuta</i>	Chinese Holly
<i>I. crenata</i>	Japanese Holly
<i>I. opaca</i>	American Holly
<i>I. pernyi</i>	Holly
<i>I. vomitoria</i>	Yaupon
<i>Iris</i> spp.	Iris species**
<i>Jasminium nudiflorum</i>	Winter Jasmine
<i>Juniperus chinensis</i>	Chinese Juniper
<i>J. conferta</i>	Shore Juniper
<i>J. horizontalis</i>	Creeping Juniper
<i>Juglans</i> sn.	Walnut*
<i>Justicia brandegeana</i>	Shrimp Plant
<i>Lagerstromia indica</i>	Crepe Myrtle
<i>Ligustrum amurense</i>	Amur Privet
<i>L. japonicum</i>	Japanese Privet
<i>L. lucidum</i>	Glossy Privet (Waxleaf)
<i>Liriope muscari</i>	Big Blue Lily Turf
<i>Lonicera japonica</i>	Japanese Honeysuckle
<i>L. tatarica</i>	Tatarian Honeysuckle
<i>Magnolia</i> spp.	Magnolia species**
<i>Maleophora luteola</i>	Ice Plant
<i>Malus</i> sp.	Crabapple*
<i>Nandina domestica</i>	Heavenly Bamboo
<i>Narcissus</i> spp.	Narcissus species**
<i>Nerium</i> spp.	Oleander

*Ornamental species only. Do not use on food producing trees or vines.

**For use on landscape ornamental sites.

Scientific name -----	Common name -----
<i>Olea europaea</i>	Olive *
<i>Ophiopogon japonicus</i>	Mondo Grass
<i>Osteospermum fruticosum</i>	Trailing African Daisy
<i>Oxydendrum arboreum</i>	Sourwood
<i>Persea americana</i>	Avocado *
<i>Photinia fraseri</i>	Fraser's Photinia (Redtip)
<i>Picea</i> spp.	Spruce species** (Colorado Blue, Norway, etc.)
<i>Pieris japonica</i>	Lily-of-the-Valley Shrub
<i>Pinus brutia</i>	Calabrian Pine
<i>P. canariensis</i>	Canary Island Pine
<i>P. elliotii</i>	Slash Pine
<i>P. halepensis</i>	Aleppo Pine
<i>P. nigra</i>	Austrian Black Pine
<i>P. palustris</i>	Longleaf Pine
<i>P. radiata</i>	Monterey Pine
<i>P. strobus</i>	Eastern White Pine
<i>P. sylvestris</i>	Scotch Pine
<i>P. taeda</i>	Loblolly Pine
<i>P. thunbergiana</i>	Japanese Black Pine
<i>P. virginiana</i>	Virginia Pine
<i>Pistachio</i> sp.	Pistachio *
<i>Pittosporum rhombifolium</i>	Queensland Pittosporum
<i>P. tobira</i>	Japanese Pittosporum
<i>Podocarpus macrophyllus</i>	Japanese Yew
<i>Prunus laurocerasus</i>	English Laurel
<i>Prunus</i> sp.	Almond, Apricot, Nectarine, Peach, Plum and Prune *
<i>Pseudotsuga menziesii</i>	Douglas Fir**
<i>Pyracantha coccinea</i>	Firethorn (Scarlet)
<i>P. fortuneana</i>	Firethorn
<i>P. koidzumii</i>	Firethorn
<i>Pyrus</i> sp.	Bradford Pear sp.
<i>Quercus</i> spp.	Oak species
<i>Raphiolepis indica</i>	Indian Hawthorne

*Ornamental species only. Do not use on food producing trees or vines.

**For use on landscape ornamental sites.

Scientific name

Common name

Rhododendron
(including Azalea)

'Coral Bells'
'Formosa'
'Hino-crimson'
'PJM'

Rosa banksiae

'Roseum Elegans'

Rosmarinus officinalis

Lady Bank's Rose

Santolina virens

Rosemary

Sedum album

Stonecrop

Syzygium paniculatum

Japanese Boxcherry

Taxus cuspidata

Japanese Yew

T. media

Yew

Thuja occidentalis

American Arborvitae

Trachelospermum asiaticum

Star Jasmine

Tsuga canadensis

Canada Hemlock

Tulip spp.

Tulip species

Viburnum japonicum

Japanese Viburnum

V. odoratissimum

Sweet Viburnum

V. plicatum

Japanese Snowball

V. rigidum

Canary Island Viburnum

V. tinus

Laurustinus

V. trilobium

Cranberry Bush

V. wrightii

Leatherleaf Viburnum

Vinca major

Vinca

Vinca minor

Dwarf Periwinkle

Vitis sp.

Grape*

Weigela florida

Old Fashioned Weigela

Yucca aloifolia

Spanish Bayonet

Y. filamentosa

Yucca, Adam's Needle

*Ornamental species only. Do not use on food producing trees or vines.