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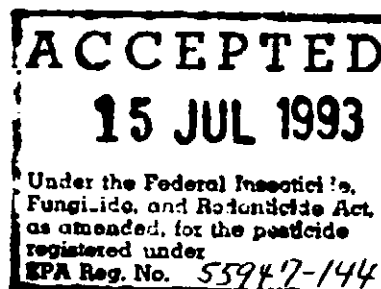
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EPA DRAFT DIRECTIONS FOR USE BOOKLET (29 June 93)
BARRICADE F HERBICIDE (Turf and Landscape Ornamentals)

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BARRICADE® F Herbicide



ACTIVE INGREDIENT:

Prodiamine: {N³,N³-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine 2.0%

INERT INGREDIENTS: 98.0%

TOTAL: 100.0%

Guaranteed Fertilizer Analysis:

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

Nitrogen from: Urea formaldehyde, Urea, Ammonia

For selective preemergence control of grass and broadleaf weeds in established turf grasses (excluding golf course putting greens), lawns and landscape ornamentals.

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. 55947-
EPA Est. No.

Sandoz Agro, Inc.
1300 E. Touhy Avenue
Des Plaines, IL 60018

BARRICADE® is a Registered Trademark of Sandoz, Ltd.

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PRECAUTIONARY STATEMENTS

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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. For terrestrial use, 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.

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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

Plastic Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or; puncture and dispose of 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.

Paper and plastic 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.

Fiber Drums: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residues into application equipment. Dispose of empty liner in a sanitary landfill or at an incineration facility if allowed by state and local authorities. If the drum cannot be reused, dispose of in a sanitary landfill or by incineration if allowed by state and local authorities.

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BARRICADE F HERBICIDE (Turf and Landscape Ornamentals)

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DIRECTIONS FOR USE

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

BARRICADE F is a selective preemergence herbicide that provides residual control of many grass and broadleaf weeds in turf grasses and landscapes. BARRICADE F controls susceptible weeds by inhibiting weed seeds germination and root development. For most effective weed control Barricade F must be incorporated by 1/2 inch of rainfall, irrigation or shallow mechanical incorporation. Incorporation should take place as soon as possible after application and should not be delayed past 14 days from the date of application.

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

Do not apply aerially.

Do not apply to golf course putting greens.

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Application Directions

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Apply uniformly through suitable, calibrated commercial application equipment.

ESTABLISHED TURF

BARRICADE F is a selective preemergence herbicide that, when properly applied, will control certain grass and broadleaf weeds in established turf grass and lawns. The species of turf grass determines the maximum amount of material that may be applied during a year.

Most effective weed control in turf grasses will be obtained when BARRICADE F is activated by at least 1/2 inch of rainfall or irrigation within 14 days after application and prior to weed germination. See the map below for approximate crabgrass germination dates.

CRABGRASS SEED GERMINATION DATES

Approximate Date

Use Precautions

The following use precautions apply to the use of BARRICADE F in turf grasses and lawns:

Application of BARRICADE F may thin emerged annual bluegrass and newly over-seeded grasses.

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

Do not apply to newly set sod until the following year.

Application of BARRICADE F 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 BARRICADE F to putting greens or areas where dichondra, colonial bentgrass, velvet bentgrass or annual bluegrass (Poa annua) are desirable species.

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Maximum Annual Rates

BARRICADE F should not be applied above a maximum annual rate of 75 lbs./A or 27 Oz./1000 ft².

Turf Species and Rates

For season long control BARRICADE F may be applied as a single application, or if needed followed by a second application for increased length of control. The length of time of residual weed control provided by BARRICADE F is related to the rate applied. Use the higher rate within the listed range for longer control. Longer control is desirable in areas where crabgrass germinates between January 1 and April 20 (See Crabgrass Seed Germination Data Map).

Select maximum use rate based on turf grass species. All applications must be made prior to germination of the target weed seeds. BARRICADE F will not control established weeds.

The rates listed in the table below are for weed control of approximately 2-6 months.

Turf Species and Rates Table:

Turf Species:	Maximum Rate of BARRICADE F Per Calendar Year Lbs./A (Oz./1000 ft²)
Bermudagrass* Centipedegrass Seashore Paspalum Tall Fescue (including turf-type) Zoysia	75 (27)
Kentucky Bluegrass Perennial Ryegrass	50 (18)
Creeping Red Fescue St. Augustinegrass	37 (14)
Creeping Bentgrass	33 (12)

* May be used on newly sprigged or plugged Bermudagrass at rates not to exceed 26 lbs. product per acre or 9 oz. product per 1000 ft². 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.

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- Do not apply more than 37.5 lbs. of BARRICADE F per application.
- Do not apply more than 75.0 lbs. of BARRICADE F per calendar year.
- If making more than one application, do not apply more than 37.5 lbs. of BARRICADE F within any 60 day period.
- Use higher rates of BARRICADE F to achieve higher levels of fertility and weed control for each turf type.

Weeds Controlled

When used at the recommended rates (see Turf Species and Rates Table) BARRICADE F will control:

Crabgrass (large, smooth)
Annual Bluegrass (Poa annua)
Goosegrass¹

Annual Foxtails
Barnyardgrass
Broadleaf Signalgrass
Johnsongrass (from seed)
Rescuegrass¹

Carpetweed
Common Chickweed
Common Lambsquarter
Common Purslane
Henbit
Knotweed
Pigweed
Prostrate Spurge
Shepardspurse²
Yellow woodsorrel (from seed)

Do not exceed the maximum annual application rates recommended for the turf species. All applications must be made prior to germination of weed seeds. BARRICADE F will not control established weeds.

1. In many areas a single application of 33 to 37 lbs/Acre of BARRICADE F will control goosegrass. However, under heavy goosegrass pressure and/or an extended growing season, apply an initial treatment of 37 lbs/Acre followed after 60 days with a second treatment of 12 to 37 lbs/Acre for season long goosegrass control.
2. Winter weeds are best controlled by applications made prior to germination: late summer, fall or winter timings.
3. Suppression only.

Overseeding/Reseeding

BARRICADE F will inhibit the germination of turf species if overseeded/reseeded too soon after application. The interval between application and overseeding/reseeding is dependent on the application rate, soil temperature, and soil moisture. A shorter interval is possible if growing conditions are warm and wet, while a longer interval is needed if conditions are cool and dry. Use the Overseeding/Reseeding Intervals Table below as a guide when choosing the appropriate overseeding/reseeding interval for each situation.

Overseeding/Reseeding Intervals Table:

BARRICADE F Rate (lbs./A)	Overseeding/Reseeding Interval (months) Based Upon Seeding Method and Predominant Soil Conditions for the Season			
	Broadcast Seeding		Drill Seeding	
	Wet and Warm	Cool and Dry	Wet and Warm	Cool and Dry
26	4	6	3	4
50	8	12	6	8
75	12	18	9	12

LANDSCAPE ORNAMENTALS

BARRICADE F is recommended for use on landscape ornamentals. Do not apply more than 37 lbs./A in any 60 day interval, and do not exceed the maximum rate per calendar year of 75 lbs./A.

BARRICADE F Herbicide will not harm most established ornamental trees, shrubs and flowers. The following species have shown tolerance to BARRICADE F:

Scientific name	Common name
-----	-----
Acer palmatum	Japanese Maple
A. platanoides	Norway Maple
Actinidia chinensis	Kiwi*
Agapanthus africanus	Lily-of-the-Nile
Arctostaphylos densiflora	Vine Hill Manzanita
Arctotheca calendula	Cape Weed
Aucuba japonica	Japanese Aucuba
Barberis gladwynensis	
B. julianae	Wintergreen Barberry
B. mentorensis	Mentor Barberry
B. thunbergii	Japanese Barberry
B. verruculosa	Warty Barberry
Buxus microphylla	Japanese Boxwood
Callistemon viminalis	Weeping Bottlebrush
Calluna vulgaris	Scotch Heather
Carpobrotus edulis	Hottentot Fig (Ice Plant)
Cassia artemisoides	Feathery Cassia
Ceanothus rigidus	Wild Lilac
Chamaecyparis pisifera	False Cypress
Cleyera japonica	Cleyera
Cornus florida	Flowering Dogwood
C. stolonifera	American Dogwood
Cortaderia selloana	Pampas Grass
Cotoneaster apiculatus	Cranberry Cotoneaster
C. buxifolius	
C. dammeri	Bearberry Cotoneaster
C. microphyllus	Rockspray Cotoneaster
Cupressus sempervirens	Italian Cypress
Delasperma alba	White Trailing Ice Plant
Dodonea viscosa	Hop Bush
Elaeagnus pungens	Silverberry
Euonymus fortunei	Wintercreeper

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

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EPA DRAFT DIRECTIONS FOR USE BOOKLET (June 29, 1993)
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Scientific name	Common name
E. japonica	Evergreen Euonymus
E. kiautschovica	Spreading Euonymus
Fatsia japonica	Japanese Aralia
Forsythia intermedia	Border Forsythia
F. viridissima	Greenstem Forsythia
Gardenia jasminoides	Gardenia, Cape-Jasmine
Hedera helix	English Ivy
Hibiscus rosa-sinensis	Chinese Hibiscus
Ilex cornuta	Chinese Holly
I. crenata	Japanese Holly
I. opaca	American Holly
I. pernyi	
Jasminum nudiflorum	Winter Jasmine
Juniperus chinensis	Chinese Juniper
J. conferta	Shore Juniper
J. horizontalis	Creeping Juniper
Juglans sp.	Walnut*
Justicia brandegeana	Shrimp Plant
Lagerstromia indica	Crepe Myrtle
Ligustrum amurense	Amur Privet
L. japonicum	Japanese Privet
L. lucidum	Glossy Privet
Liriope muscari	Big Blue Lily Turf
Lonicera japonica	Japanese Honeysuckle
L. tatarica	Tatarian Honeysuckle
Maleophora luteola	Ice Plant
Malus sp.	Crabapple*
Nandina domestica	Heavenly Bamboo
Olea europaea	Olive*
Ophiopogon japonicus	Mondo Grass
Osteospermum fruticosum	Trailing African Daisy
Oxydendrum arboreum	Sourwood
Persea americana	Avocado*
Photinia fraseri	Frasier's Photinia
Picea abies	Norway Spruce
Pieris japonica	Lily-of-the-Valley Shrub

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EPA DRAFT DIRECTIONS FOR USE BOOKLET (June 29, 1993)
BARRICADE P HERBICIDE (Turf and Landscape Ornamentals)

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Scientific name -----	Common name -----
Pinus brutia	Calabrian Pine
P. canariensis	Canary Island Pine
P. halepensis	Aleppo Pine
P. nigra	Austrian Black Pine
P. radiata	Monterey Pine
P. thunbergiana	Japanese Black Pine
P. strobus	Eastern White Pine
P. sylvestris	Scotch Pine
Pistachio sp.	Pistachio*
Pittosporum rhombifolium	Queensland Pittosporum
P. tobira	Mock Orange
Podocarpus macrophyllus	Japanese Yew
Prunus laurocerasus	English Laurel
Prunus sp.	Almond, Apricot, Nectarine, Peach, Plum and Prune*
Pyracantha coccinea	Firethorn
P. fortuneana	Firethorn
P. koidzumii	Firethorn
Pyrus sp.	Bradford Pear sp.
Quercus rubra	Red Oak
Raphiolepis indica	Indian Hawthorne
Rhododendron	'Coral Bells'
(including Azalea)	'Formosa'
	'Hino-crimson'
	'PJM'
	'Roseum Elegans'
Rosa banksiae	Lady Bank's Rose
Rosmarinus officinalis	Rosemary
Santolina virens	
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
Viburnum japonicum	Japanese Viburnum
V. odoratissimum	Sweet Viburnum

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EPA DRAFT DIRECTIONS FOR USE BOOKLET (June 29, 1993)
BARRICADE F HERBICIDE (Turf and Landscape Ornamentals)

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Scientific name	Common name
V. plicatum	Japanese Snowball
V. rigidum	Canary Island Viburnum
V. tinus	Laurustinus
V. trilobium	Cranberry Bush
V. wrightii	
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.

**LIMITATION OF WARRANTY
AND LIMITATION OF LIABILITY**

NOTICE: Read this Limitation of Warranty and Limitation of Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Sandoz or seller. All such risks shall be assumed by buyer or user.

Sandoz warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, under normal use conditions, subject to the risks described above. **SANDOZ MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.** In no event shall Sandoz or seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product.

Sandoz and seller offer this product, and buyer and user accept it, subject to the foregoing limitations of warranty and limitation of liability, which may not be modified by any oral or written agreement.

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EPA DRAFT CONTAINER LABEL (June 29, 1993)
BARRICADE F HERBICIDE (Turf and Landscape Ornamentals)

1

BARRICADE® F Herbicide

ACTIVE INGREDIENT:

Prodiamine: [N³,N³-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine 2.0%

INERT INGREDIENTS: 98.0%

TOTAL: 100.0%

Guaranteed Fertilizer Analysis:

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

Nitrogen from: Urea formaldehyde, Urea, Ammonia

For selective preemergence control of grass and broadleaf weeds in established turf grasses (excluding golf course putting greens), lawns and landscape ornamentals.

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. 55947-
EPA Est. No.

Sandoz Agro, Inc.
1300 E. Touhy Avenue
Des Plaines, IL 60018

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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. For terrestrial use, 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.

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EPA DRAFT CONTAINER LABEL (June 29, 1993)
BARRICADE F HERBICIDE (Turf and Landscape Ornamentals)

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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

Plastic Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or; puncture and dispose of 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.

Fiber Drums: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residues into application equipment. Dispose of empty liner in a sanitary landfill or at an incineration facility if allowed by state and local authorities. If the drum cannot be reused, dispose of in a sanitary landfill or by incineration if allowed by state and local authorities.

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 through any type of irrigation system.

IMPORTANT: Read the Limited Warranty and Liability and all applicable *Directions for Use* on attached leaflet before using this product.

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**LIMITATION OF WARRANTY
AND LIMITATION OF LIABILITY**

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Sandoz and seller offer this product, and buyer and user accept it, subject to the foregoing limitations of warranty and limitation of liability, which may not be modified by any oral or written agreement.