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EPA DRAFT <u>DIRECTIONS</u> FOR USE BOOKLET (June 29, 1993)
BARRICADE 65WG (Turf and Landscape Ornamentals)

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ACCEPTED 15 JUL 1993

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 55947-43

BARRICADE 65WG Herbicide

ACTIVE INGREDIENT:

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 next page for additional precautionary statements and statement of practical treatment.

EPA Reg. No. 55947-43 EPA Est. No.

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

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EPA DRAFT <u>DIRECTIONS FOR USE BOOKLET</u> (June 29, 1993) BARRICADE 65WG (Turf and Landscape Ornamentals)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if inhaled or absorbed through the skin. Avoid contact with skin, eyes, or clothing. Avoid breathing dust. Prolonged or frequently repeated skin contact, while mixing or handling the concentrated material, may cause allergic reactions in some individuals. During mixing and loading of concentrate material wear chemical resistant gloves. Wash non-disposable glove thoroughly with soap and water before removing.

STATEMENT OF PRACTICAL TREATMENT

If on skin: Wash with soap and water. Rinse thoroughly.

If inhaled: Remove to clear air.

If in eyes: Flush thoroughly with water for several minutes. Contact a physician if irritation persists.

ENVIRONMENTAL HAZARDS

This product has low solubility in water. At the limit of solubility, this product is not toxic to fish. However, at concentrations substantially 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.

DIRECTIONS FOR USE

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

BARRICADE 65WG is a selective preemergence herbicide that provides residual control of many grass and broadleaf weeds in turf grasses and landscapes. BARRICADE 65WG controls susceptible weeds by inhibiting weed seeds germination and root development. For most effective weed control BARRICADE 65WG must be incorporated by 1/2 inch of rainfall, irrigation or shallow mechanical incorporation. Incorporation should take place as scon as possible after application and should not be delayed past 14 days from the date of application.

All applicable directions, restrictions, and precautions on the labels of EPA registered tank mix partners are to be followed.

Do not blend BARRICADE 65WG onto dry fertilizer or any other granular material.

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

Do not apply aerially.

Do not apply to golf course putting greens.

Mixing and Application

Apply BARRICADE 65WG in a minimum of 20 gallons of carrier (water and/or fluid fertilizer) per treated acre (1/2 gallon / 1000 ft²) using a calibrated, low pressure sprayer with 50 mesh or coarser screens. A broadcast boom or hand held wand designed for herbicide or insecticide application will provide the best results. Select nozzle pressure and gallonage to provide complete coverage.

A spray colorant may be used to modify the color of BARRICADE 65WG to improve application accuracy by minimizing swath skips and overlaps.

Thorough mixing of BARRICADE 65WG in the spray tank is essential for uniform application. Fill the spray tank half full with clean water or fluid fertilizer. Start agitation and check to ensure it is working properly, then add BARRICADE 65WG herbicide directly into the tank.

Add the rest of the carrier to obtain the final spray volume. Maintain vigorous agitation in the spray tank before and during the application. This will ensure a well mixed spray suspension.

Thoroughly clean the sprayer after use by flushing the system with water containing a detergent. Do not allow spray suspension to dry in the tank.

BARRICADE 65WG may be mixed with certain other EPA registered herbicides to provide a broader spectrum of control or to control emerged weeds. See Mixing Order in this section and the ESTABLISHED TURF section for specific recommendations.

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Mixing Order for Tank Mixtures

When mixing BARRICADE 65WG with other components (carrier and pesticide products) add the products to the spray tank in the following order:

- 1 Water dispersible granules (WG formulations) and wettable powders (WP formulations). Wettable powders should be premixed with a small amount of carrier to form a slurry before addition; water dispersible granules can be added directly during filling. Allow the product to disperse completely before other products are added.
- 2 Flowable liquids (FL or SC).
- 3 Emulsifiable concentrates (EC).
- 4 Surfactants approved for application to turf or landscapes. Check surfactant label before use.

Compatibility Test

Before mixing BARRICADE 65WG with other pesticides in the spray tank, test the compatibility by mixing all components (carrier and pesticide products) in a small container in proportionate quantities (see following table).

Amount of Component to Add to One Pint of Spray Carrier (Assuming Volume is 25 Gallons per Acre)

COMPONENT	ACRE	PER	LEVEL
FORMULATIONS		1000 Ft ²	TEASPOONS
Dry	1.0 lb	0.4 oz	1.5
Liquid	1.0 pt	0.4 oz	0.5

If components do not ball-up or form flakes, sludge, gels, oily films or layers, or other precipitates, then the tested spray mix is compatible. Incompatibility in any of the above forms will usually occur within 5 minutes after mixing.

If components are incompatible, the use of a compatibility agent is recommended. Rerun the above compatibility test with commercially available compatibility ments until a suitable compatibility agent is identified.



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EPA DRAFT <u>DIRECTIONS FOR USE BOOKLET</u> (June 29, 1993) BARRICADE 65WG (Turf and Landscape Ornamentals)

ESTABLISHED TURF

BARRICADE 65WG 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 this product that may be applied during a year.

Most effective weed control in turf grasses will be obtained when BARRICADE 65WG is activated by at least 1/2 inch of rainfall or irrigation within 14 days after application and prior to weed seed germination. See the map below for approximate crabgrass seed germination dates.

CRABGRASS SEED GERMINATION DATES

Approximate Date

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USE PRECAUTIONS

The following use precautions apply to the use of BARRICADE 65WG in turf grasses and lawns:

Application of BARRICADE 65WG 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 65WG 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 65WG 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 65WG to putting greens or areas where dichondra, colonial bentgrass, velvet bentgrass or annual bluegrass (Poa annua) are desirable species.

Rates and Timings

BARRICADE 65WG may be applied as a single application or as a sequential application to control weeds germinating throughout the year. All applications must be made prior to germination of the target weeds. BARRICADE 65WG 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 BARRICADE 65WG is related to the rate applied.

Maximum Annual Rates

BARRICADE 65WG is recommended for use on the turf grass species listed in the following table. Do not apply more than 1.15 lbs./A or the maximum yearly rate, whichever is less, in any 60 day interval; and do not exceed the maximum yearly rate as given in the following table:

Maximum Rate / Calendar Year of BARRICADE 65WG by Turf Grass Species				
Turf Species	Lbs/A	Oz/1000 Ft ²		
Bermudagrass* Centipedegrass Seashore Paspalum Tall Fescue (including turf-type) Zoysia	2.30	0.83		
Kentucky Bluegrass Perennial Ryegrass	1.50	0.55		
Creeping Red Fescue St. Augustinegrass	1.15	0.40		
Creeping Bentgrass	1.00	0.37		

^{*} May be used on newly sprigged or plugged Bermudagrass at ratio and exceed 0.80 lbs. product per acre or 0.30 oz. product per 1000 ft2. Hewly sprigged or plugged Bermudagrass stolon rooting may be temporarily retarded.



Weeds Controlled

When used in accordance with this label BARRICADE 65WG will provide control of the following weeds:

Crabgrass (large, smooth) Annual Bluegrass (<u>Poa annua</u>) Goosegrass³

Annual Foxtails Barnyardgrass Broadleaf Signalgrass Johnsongrass (from seed) Rescuegrass Carpetweed
Common Chickweed
Common Chickweed
Common Lambsquarter
Common Purslane
Henbit
Knotweed
Pigweed
Prostrate Spurge
Shepardspurse?
Yellow woodsorrel(from seed)

Do not exceed the maximum annual application rates reconmended for the turf species. All applications must be made prior to germination of the weed weeds. Weeds control situations requiring rates greater than 1.15 lbs./A will require a sequential application (see Rates and Timings).

^{1.} In many areas a single application of 1.0 to 1.15 lbs/Acre of BARRICADE 65WG will control goosegrass. However, under heavy goosegrass pressure and/or an extended growing season, make an initial application of 1.15 lbs./Acre followed ofter 60 days by a second application of 0.38 to 1.15 lbs./Acre for season long goosegrass control.

Winter weeds are best controlled by applications made prior to germination: late summer, fall or winter timings.

^{3.} Suppression only.

Overseeding / Reseeding

BARRICADE 65WG will inhibit the germination of turf species if overseeded too soon after application. Wait 4-6 months per 0.75 pound of BARRICADE 65WG applied when grass seed is to be broadcasted over the turf surface. This overseeding interval can be shortened to 3-4 months per 0.75 pound when grass seed is drilled directly into the soil. The interval between application and overseeding / reseeding is dependent on the application rate, soil temperature, and soil moisture. A shorter period is required if growing conditions are warm and wet, while a longer interval is needed if conditions are cool and dry.

Turf Tank Mixes

BARRICADE 65WG may be tank mixed with other registered turf herbicides. Tank mixes are for use only in states where the tank mix product and application site are registered.

Consult the label(s) of the individual tank mix product(s) for use, rate recommendations, application timing, weeds controlled, turf grass safety and specific precautions and/or restrictions.

Before mixing tank mix partners in the spray tank it is advisable to test compatibility by mixing the products in a small container. See the Compatibility Test section under Mixing and Application.

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LANDSCAPE ORNAMENTALS

BARRICADE 65WG is recommended for use on landscape ornamentals. Do not apply more than 1.15 lbs./A in any 60 day interval, and do not exceed the maximum rate per calendar year of 2.3 lbs./A.

BARRICADE 65WG Herbicide will not harm most established ornamental trees, shrubs and flowers. The following species have shown tolerance to BARRICADE 65WG:

Scientific name

Common name

______ -----Acer palmatum A. platanoides Actinidia chinensis Agapanthus africanus
Arctostaphylos densiflora
Arctotheca calendula

Lily-of-the-Nile
Vine Hill Manzanita
Cape Weed Aucuba japonica Barberis gladwynensis

B. julianae B. mentorensis B. thunbergii B. verruculosa Buxus microphylla Callistemon viminalis Calluna vulgaris Carpobrotus edulis Cassia artemisoides Ceanothus rigidus Chamaecyparis pisifera Cleyera japonica Cornus florida C. stolonitera Cortaderia selloana Cotoneaster apiculatus C. buxifolius

C. dammeri C. microphyllus Cretaegus spp. Cupressus sempervirens Delasperma alba Dodonea viscosa Elaeagnus pungens Euonymus fortunei

Japanese Maple Norway Maple Kiwi* Japanese Aucuba

Wintergreen Barberry Mentor Barberry Japanese Barberry Warty Barberry
Japanese Boxwood
Weeping Bottlebrush
Scotch Heather Hottentot Fig (Ice Plant) Feathery Cassia Wild Lilac False Cypress Cleyera Flowering Dogwood American Dogwood Pampas Grass Cranberry Cotoneaster

Bearberry Cotoneaster Rockspray Cotoneaster Hawthorne Italian Cypress
White Trailing Ice Plant Hop Bush Silverberry Wintercreeper

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

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Scientific name

Common name

E. japonica
E. kiautschovica Fatsia japonica Forsythia intermedia F. viridissima Gardenia jasminoides Hedera helix Hibiscus rosa-sinensis Ilex cornuta I. crenata I. opaca I. pernyi Jasminium nudiflorum Juniperus chinensis J. conferta J. horizontalis Juglans sp. Justicia brandegeana Lagerstromia indica Ligustrum amurense L. japonicum L. lucidum Liriope muscari Lonicera japonica L. tatarica Maleophora luteola Malus sp. Nandina domestica Olea europa Ophiopogon japonicus Osteospermum fruticosum Oxydendrum arboreum Persea americana Photinia fraseri Picea abies Pieris japonica

Evergreen Euonymus
Spreading Euonymus
Japanese Aralia
Border Forsythia
Greenstem Forsythia
Gardenia, Cape-Jasmine
English Ivy
Chinese Hibiscus
Chinese Holly
Japanese Holly
American Holly

Winter Jasmine Chinese Juniper Shore Juniper Creeping Juniper Walnut* Shrimp Plant Crepe Myrtle Amur Privet Japanese Privet Glossy Privet Big Blue Lily Turf Japanese Honeysuckle Tatarian Honeysuckle Ice Plant Crabapple* Heavenly Bamboo Olive* Mondo Grass Trailing African Daisy Sourwood Avocado* Frasier's Photinia Norway Spruce Lily-of-the-Valley Shrub

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Scientific name

Common name

Pinus brutia
P. canariensis
P. halepensis
P. nigra
P. radiata
P. thunbergiana
P. strobus
P. sylvestris
Pistachio sp.
Pittosporum rhombifolium
P. tobira
Podocarpus macrophyllus
Prunus laurocerasus
Prunus sp.

Pyracantha coccinea
P. fortuneana
P. koidzumii
Pyrus sp.
Quercus rubra
Raphiolepis indica
Rhododendron
(including Azalea)

Rosa banksiae
Rosmarinus officinalis
Rumohra adiantiformis
Santolina virens
Sedum album
Syzygium paniculatum
Taxus cuspidata
T. media
Thuja occidentalis
Trachelospermum asiatum
Tsuga canadensis
Viburnum japonicum
V. odoratissimum

Calabrian Pine Canary Island Pine Aleppo Pine Austrian Black Pine Monterey Pine Japanese Black Pine Eastern White Pine Scotch Pine Pistachio* Queensland Pittosporum Mock Orange Japanese Yew English Laurel Almond, Apricot, Nectarine, Peach, Plum and Prune* Firethorn Firethorn Firethorn Bradford Pear sp. Red Oak Indian Hawthorne 'Coral Bells' 'Formosa' 'Hino-crimson' 'PJM' 'Roseum Elegans' Lady Bank's Rose Rosemary Leatherleaf Fern

Stonecrop
Japanese Boxcherry
Japanese Yew
Yew
American Arborvitae
Star Jasmine
Canada Hemlock
Japanese Viburnum
Sweet Viburnum

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

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Scientific name	Common name
V. plicatum	Japanese Snowball
V. rigidum V. tinus	Canary Island Viburnum Laurustinus
V. trilobium V. wrightii	Cranberry Bush
Vinca minor	Dwarf Periwinkle
Vitis sp.	Grape*
Weigela florida	Old Fashioned Weigela
Yucca aloifolia	Spanish Bayonet
Y. filamentosa	Yucca, Adam's Needle

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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 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

<u>Paper bags and boxes</u>: Completely empty container into application equipment. Then dispose of empty bag or box 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.

<u>Plastic Containers</u>: 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.

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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.

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BARRICADE 65WG Herbicide

ACTIVE INGREDIENT:

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

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KEEP OUT OF REACH OF CHILDREN

CAUTION

See next page for additional **Precautionary** Statements and Statement of Practical Treatment.

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EPA DRAFT <u>CONTAINER LABEL</u> (June 29, 1993) BARRICADE 65WG (TURF AND LANDSCAPE ORNAMENTALS)

PRECAUTIONARY STATEMENTS

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DIRECTIONS FOR DEE

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

Refer to the DIRECTIONS FOR USE booklet attached to this container for use directions and additional precautionary statements. Apply this product only as directed in the attached label; booklet. For additional copies of the DIRECTIONS FOR USE booklet, write the manufacturer.

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

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



EPA DRAFT CONTAINER LABEL (June 29, 1993)
BARRICADE 65WG (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 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

<u>Paper bags and boxes</u>: Completely empty container into application equipment. Then dispose of empty bag or box 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.

<u>Plastic Containers</u>: 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.

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