

**KOOS FERTILIZER WITH BARRICADE®
PREEMERGENCE WEED CONTROL**

ACTIVE INGREDIENT:

Prodiamine: [N³,N³-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine 0.383%

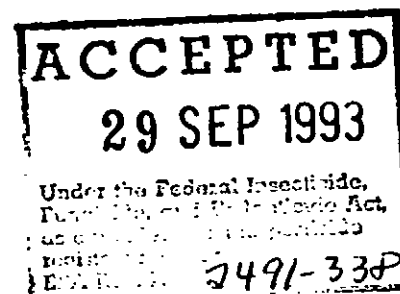
INERT INGREDIENTS: 99.617%

TOTAL: 100.0%

Guaranteed Fertilizer Analysis:

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

Nitrogen from: Urea formaldehyde, Urea, Ammonia



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. 2491-338
EPA Est. No. 2491-WI-1
EPA Est. No. 37105-FL-1

Koos, Inc.
4500 13th Court
Kenosha, WI 53140

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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

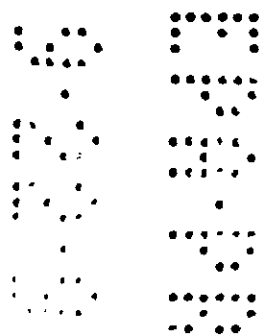
If in eyes: Flush thoroughly with water for several minutes. Get medical attention if irritation persists.

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.



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

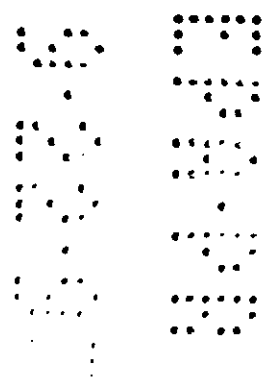
Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

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.



DIRECTIONS FOR USE

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

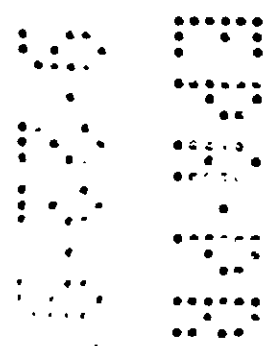
This product is a selective preemergence herbicide that provides residual control of many grass and broadleaf weeds in turf grasses and landscapes. This product controls susceptible weeds by inhibiting weed seeds germination and root development. For most effective weed control this product must be incorporated 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.

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.

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

Do not apply aerially.

Do not apply to golf course putting greens.



Application Directions

Apply uniformly through suitable, calibrated commercial application equipment.

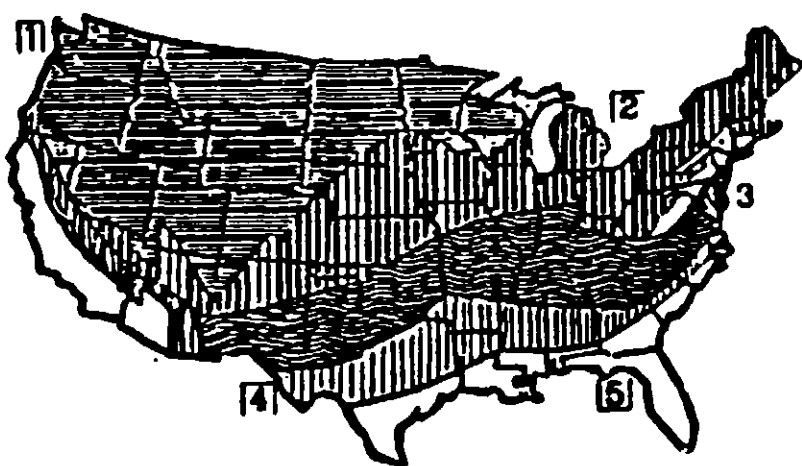
ESTABLISHED TURF

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

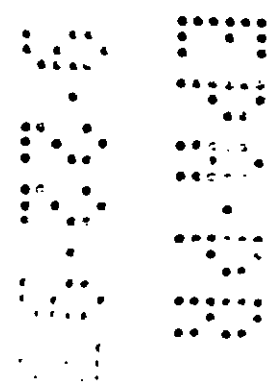
Most effective weed control in turf grasses will be obtained when this product is activated by at least 1/2 inch of rainfall or irrigation within 14 days after application and prior to weed germination. See the map below for approximate crabgrass germination dates.

CRABGRASS SEED GERMINATION DATES

Approximate Date



- 1 After May 30
- 2 After May 10
- 3 After April 20
- 4 After March 20
- 5 Jan 1 to Mar 20



Use Precautions

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

Application of this product may thin emerged annual bluegrass and newly over-seeded grasses.

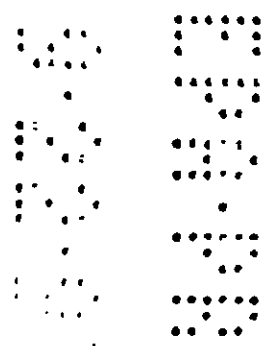
Do not apply to OVERSEEDED TURF for 60 days after seeding or until after the second mowing, which ever is longer. Injury to desirable seedlings is likely if this product is applied before seedling secondary roots are in the second inch of soil, not thatch plus soil.

Do not 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.



Maximum Annual Rates

This product should not be applied above a maximum annual rate of 392 lbs./A or 8.8 lbs./1000 ft².

Turf Species and Rates

For season long control this product 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 this product 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. This product 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 this product Per Calendar Year Lbs./A (Lbs./1000 ft ²)
Bermudagrass* Centipedegrass Seashore Paspalum Tall Fescue (including turf-type) Zoysia	392 (8.8)
Kentucky Bluegrass Perennial Ryegrass	261 (5.9)
Creeping Red Fescue St. Augustinegrass	193 (4.6)
Creeping Bentgrass	172 (3.9)

* May be used on newly sprigged or plugged Bermudagrass at rates not to exceed 136 lbs. product per acre or 2.9 lbs. product per 1000 ft². On newly sprigged or plugged Bermudagrass temporary slowing of stolon rooting may occur. Suppression only of Foxtail, Goosegrass and Rescuegrass due to reduced product rates used in sprigging situations.

- Do not apply more than 196 lbs. of this product per application.
- Do not apply more than 392 lbs. of this product per calendar year.
- If making more than one application, do not apply more than 196 lbs. of this product within any 60 day period.
- Use higher rates of this product 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) this product will control:

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

Annual Foxtails
Barnyardgrass
Broadleaf Signalgrass
Johnsongrass (from seed)
Rescuegrass³

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. This product will not control established weeds.

1. In many areas a single application of 172 to 193 lbs/Acre of this product will control goosegrass. However, under heavy goosegrass pressure and/or an extended growing season, apply an initial treatment of 193 lbs/Acre followed after 60 days with a second treatment of 53 to 193 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.

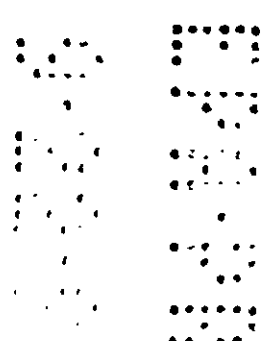
Overseeding/Reseeding

This product 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:

This Product 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
136	4	6	3	4
261	8	12	6	8
392	12	18	9	12



LANDSCAPE ORNAMENTALS

This product is recommended for use on landscape ornamentals. Do not apply more than 193 lbs./A in any 60 day interval, and do not exceed the maximum rate per calendar year of 392 lbs./A.

This product will not harm most established ornamental trees, shrubs and flowers. The following species have shown tolerance to this product:

Scientific name	Common name
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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.

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	
Jasminium 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 europa	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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Scientific name	Common name
<i>Pinus brutia</i>	Calabrian Pine
<i>P. canariensis</i>	Canary Island Pine
<i>P. halepensis</i>	Aleppo Pine
<i>P. nigra</i>	Austrian Black Pine
<i>P. radiata</i>	Monterey Pine
<i>P. thunbergiana</i>	Japanese Black Pine
<i>P. strobus</i>	Eastern White Pine
<i>P. sylvestris</i>	Scotch Pine
<i>Pistachio sp.</i>	Pistachio*
<i>Pittosporum rhombifolium</i>	Queensland Pittosporum
<i>P. tobira</i>	Mock Orange
<i>Podocarpus macrophyllus</i>	Japanese Yew
<i>Prunus laurocerasus</i>	English Laurel
<i>Prunus sp.</i>	Almond, Apricot, Nectarine, Peach, Plum and Prune*
<i>Pyracantha coccinea</i>	Firethorn
<i>P. fortuneana</i>	Firethorn
<i>P. koidzumii</i>	Firethorn
<i>Pyrus sp.</i>	Bradford Pear sp.
<i>Quercus rubra</i>	Red Oak
<i>Raphiolepis indica</i>	Indian Hawthorne
<i>Rhododendron</i> (including Azalea)	'Coral Bells' 'Formosa' 'Hino-crimson' 'PJM' 'Roseum Elegans'
<i>Rosa banksiae</i>	Lady Bank's Rose
<i>Rosmarinus officinalis</i>	Rosemary
<i>Santolina virens</i>	
<i>Sedum album</i>	Stonecrop
<i>Syzygium paniculatum</i>	Japanese Boxcherry
<i>Taxus cuspidata</i>	Japanese Yew
<i>T. media</i>	Yew
<i>Thuja occidentalis</i>	American Arborvitae
<i>Trachelospermum asiaticum</i>	Star Jasmine
<i>Tsuga canadensis</i>	Canada Hemlock
<i>Viburnum japonicum</i>	Japanese Viburnum
<i>V. odoratissimum</i>	Sweet Viburnum

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

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

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WARRANTY STATEMENT

NOTICE: Buyer and user assume all risk and liability of use, storage and/or handling of this product not in accordance with the terms of this label.

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