UNITED STATES ENVIRONMENTAL PROTECTION AGENCY ASSESSMENT

OCT | 6 1997

er. nillian E. King Regal Chemical Company 600 Branch Road F.O. BOX 900 Alxpooretta, GA 30201

bear Hr. King:

Subject: Regalkace

EPA Registration Ro. 48234-5

Recalkade 37

EFA Registration No. 48234-6

Recalkace 30

bha Registration No. 45234-6

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with a facility of the archaeter to be a builded by ast a taking a training Intilitations (ave been reviewed and found acceptable or any the receist insecticion, rubulcine and recenticide act (Fire) as asenued provided that you:

- i. Applied the atsterent that tesus: "malkicadi" is a the istered Tracemers of Ganacz, Ita.", to read: "chrell for" is a negletered Trademark or advarted Crop Protection, Inc. ".
- z. Alphauetize the list of weeds given under the heading "weeds Controlled".

if these conditions are not complied with, these registrations will be subject to cancellation in accordance with FIFRA, Section t(e). Your release for shipment of these products constitutes acceptance of these conditions.

Stamped copies of the labels are enclosed for your records.

Sincerely yours.

Joanne I. Hiller CONCURRENCESICE Handler (23) Berbicice Erlanca SYMBOL .Encipsures..... --Registration-Bivision-(7505c) SURNAME EMilsdn:Diskerte Prodiatise:10-16-97 DATE EPA Form 1320-1 (12-70) OFFICIAL FILE COPY

*U.S. GPO : 1986-159-319

REGALKADE 37

Prodiamine: [N phenylenedian	l ³ ,N ³ -Di- <u>n</u> -	، ر propyl-2,4-dinitro-6-(trifluoro	methyl}- <u>m</u> - 0.37%
INERT INGRED	DIENTS:	•••••	99.63%
TOTAL:	••••••	•••••	100.0%
Guaranteed Fe	ertilizer An	alysis:	ACCEPTED with COMMENTS In EPA Letter Dated
Nitrogen	32 %	(N)	
Phosphorus		(P ₂ O ₅)	OCT 6 1997
Potassium	6 %	(K ₂ O)	Under the Federal Insecticide, Fundicide, and Rodenticide Act as amended, for the pesticide
Nitrogen from:	: Urea forn	naldehyde, Urea, Ammonia	registered under EPA Reg. No. 48234-6

For selective preemergence control of grass and broadleaf weeds in:

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

KEEP OUT OF REACH OF CHILDREN

CAUTION

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

Net Weight:

EPA Reg. No. 48234-6 EPA Est. No.

> Regal Chemical Co. 600 Branch Road Alpharetta, GA 30201

BARRICADE® is a Registered Trademark of Sandoz, Ltd.

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.

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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.

If material is spilled: Contain and sweep up material of spill for disposal or use per label instructions. Wash cleanup equipment to prevent contamination elsewhere. Excess quantities above normal application rates could result in damage to plants subject to spill. Water-in remainder, disc under, cover with layer of soil, or leave exposed to sunlight, as deemed appropriate to the situation.

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

<u>Paper containers:</u> 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.

DIRECTIONS FOR USE

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

REGALKADE 37 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 and wildflower plantings

REGALKADE 37 controls susceptible weeds by inhibiting weed seeds germination and root development. Most effective weed control will be obtained when REGALKADE 37 is activated by at least 0.5 inch of rainfall or irrigation, or with shallow (1-2 inches) incorporation, 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 REGALKADE 37.

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 with suitable, calibrated application equipment.

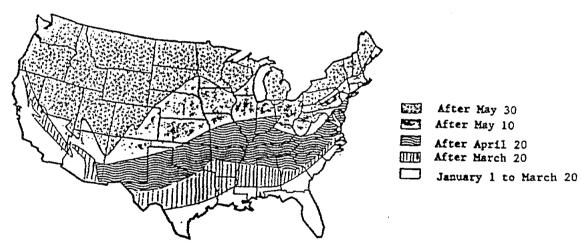
ESTABLISHED TURE

REGALKADE 37 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 REGALKADE 37 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 REGALKADE 37 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 REGALKADE 37 in turf grasses and lawns:

Application of REGALKADE 37 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 REGALKADE 37 is applied before seedling secondary roots are in the second inch of soil, not thatch plus soil.

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

Application of REGALKADE 37 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 REGALKADE 37 to putting greens or areas where dichondra, colonial bentgrass, velvet bentgrass or annual bluegrass (*Poa annua*) are desirable species.

Rates of Application

REGALKADE 37 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. REGALKADE 37 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 REGALKADE 37 is related to the rate applied.

Maximum Annual Rates

REGALKADE 37 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 REGALKADE 37 by Turf Grass Species 1)						
Turf Species:	lbs product/A	lbs ai/A				
Bermudagrass ²⁾ Bahiagrass Centipedegrass Seashore Paspalum St. Augustinegrass Tall Fescue (including turf-type) Zoysia	405	1.5				
Buffalograss Kentucky Bluegrass Perennial Ryegrass	270	1.0				
Creeping Red Fescue	202	0.75				
Creeping Bentgrass	175	0.65				

¹⁾ These are the maximum rates per calendar year by species limitations.

- Do not apply more than 405 lbs. of REGALKADE 37 per calendar year.
- Use higher rates of REGALKADE 37 to achieve higher levels of fertility and longer periods of weed control for each turf type, but do not exceed the maximum application rates specified in the Maximum Annual Rates Table.

²⁾ May be used on newly sprigged or plugged Bermudagrass at rates not to exceed 141 lbs/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.

Weeds Controlled

When used in accordance with this label REGALKADE 37 will provide control of the following weeds:

Barnyardgrass

Bluegrass, Annual (Poa annua)

Crabgrass (large, smooth)

Crowfootgrass
Cupgrass, Woolly
Foxtails, Annual
Goosegrass¹

Itchgrass

Johnsongrass (from seed)

Junglerice Lovegrass

Panicum (Texas, Fall, Browntop)

Rescuegrass³

Signalgrass, Broadleaf

Sprangletop Witchgrass Carpetweed

Chickweed, Common

Chickweed, Mouseear (from seed)

Henbit Knotweed Kochia

Lambsquarter, Common

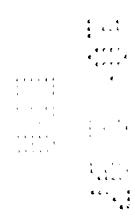
Pigweed

Purslane, Common Pusley, Florida Shepherd's Purse² Speedwell, Persian Spurge, Prostrate

Woodsorrel, Yellow (from seed)

- In many areas a single application of 175 to 405 lbs/A of REGALKADE 37 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 175 to 270 lbs/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 TURE

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 REGALKADE 37 is applied before seedling secondary roots are in the second inch of soil, not thatch plus soil.

WHEN TO OVERSEED AFTER APPLICATION

REGALKADE 37 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.

REGALKADE :	37 Rate (lb/A)	Months Before Overseeding			
Product	ai	North	Transition	South	
135	.50	4	4	4	
175	.66	5	4	4	
202	.74	6	5	5	
215	.80		6	6	
270	1.00		7	7	
308	1.14			9	
350	1.30			10	
405	1.50			12	

LANDSCAPE ORNAMENTALS

(including Established Perennials and Wildflower Plantings)

REGALKADE 37 may be applied for residual preemergence weed control in ornamentals.

Use Rates

Apply REGALKADE 37 at 175 to 405 lbs/A in fall and/or spring. Use higher rates of application for longer control periods. Sequential applications may be made so long as the total amount of product applied does not exceed the maximum annual application rate of 405 lbs/A.

Application Timing and Information

REGALKADE 37 is a preemergence herbicide and will not control emerged weeds. Most effective weed control in ornamentals will be obtained when REGALKADE 37 is activated by at least 0.5 inch of rainfall or irrigation, or with shallow (1 to 2 inches) mechanical incorporation, prior to weed seed germination and within 14 days following application.

Best weed control is obtained when REGALKADE 37 is applied to soil free of clods, weeds, and debris such as leaves. Prior to application of REGALKADE 37, control existing vegetation by hand weeding, cultivation or the use of an appropriate postemergence herbicide.

Established Landscape Ornamentals

REGALKADE 37 may be applied at any time to 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 REGALKADE 37 in the soil.

Newly Transplanted Landscape Ornamentals

REGALKADE 37 may be applied to newly transplanted ornamentals as a broadcast, over the top or directed application. Delay application to allow soil to settle around new transplants and water thoroughly before applying REGALKADE 37. Apply REGALKADE 37 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.

Tolerant Ornamental Species

REGALKADE 37 will not harm most trees, shrubs, vines and flowers. The species listed below are tolerant to REGALKADE 37. Best results will be obtained when REGALKADE 37 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. REGALKADE 37 may be applied over the top of these species.

When plants are under stress (such as heat, drought, or frost damage) some cultivars of listed plants may be sensitive to REGALKADE 37.

Scientific name

Abies spp.

Abelia grandiflora Acer palmatum A. platanoides Achillea sp.

Actinidia chinensis Agapanthus africanus

Agapanthus orientalis

Akebia quintata Allium cernuum Anemone hybrida Aquilegia sp.

Arctostaphylos densiflora Arctotheca calendula

Artemesia sp. Aster sp.

Aster X Frikartii Athrium Filiz-femina Aucuba japonica

Begonia sp.

Berberis gladwynensis

B. Julianae
B. mentorensis
B. Thunbergii
B. verruculosa
Bergenia cordifolia
Boltonia asteroides

Sur leia davidii

Common name

Fir species * *

(Balsam, Fraser, Noble, etc.)

Abelia: Sherwood Japanese Maple Norway Maple

Yarrow: King Edward

Kiwi*

Lily-of-the-Nile (African Lily)

Five-Leaf or Chocolate Vine Lady's Leek, Nodding Onion

Japanese Anemone Aquilegia: Red and Gold Vine Hill Manzanita

Cape Weed .

Wormwood; Silver Mound, Castle Aster: Bonny Blue, Purple Dome

Lady Fern; Fern Lady Japanese Aucuba

Fibrous Begonia: Hardy Grandis

Barberry

Wintergreen Barberry Mentor Barberry Japanese Barberry Warty Barberry

Snowbank

Butterfly-Bush (Dwarf Blue); Royal Red-

^{*} Do not use on food producing trees, vines, or plants.

^{**} Not for use on container grown plants.

Scientific Name
Buxus microphylla
Callistemon viminalis
Calluna vulgaris
Campanula carpatica
Campis X Tagliabuana

Carpobrotus edulis
Cassia artemisoides
Ceanothus rigidus
Ceratostigma plumbagonoides
Chamaecyparis pisifera
Chrysanthemum nipponicum
Cleyera japonica
Citrus spp.
Coreopsis sp.

Cornus florida C. stolonifera Cortaderia selloana Cotoneaster apiculatus

C. buxifolius
C. Dammeri
C. microphyllus
Cretaegus spp.
Crocosmia sp.

Cupressus sempervirens

Delosperma alba
Delosperma sp.
Delphinium sp.
Dianthus deltoides
D. gratianopolitanus
Dodonea viscosa
Echinacea pupurea
Elaeagnus pungens
Euonymus Fortunei

E. japonica
E. kiautschovica
Fatsia japonica
Forsythia intermedia
Forysythis suspensa
F. viridissima

Common Name
Japanese Boxwood
Weeping Bottlebrush
Scotch Heather
Tussock Bellflower, (White Clips)
Trumpet Creeper, Trumpet Flower,
Madame Galen
Hottentot Fig (Ice Plant)
Feathery Cassia
Wild Lilac

False Cypress

Cleyera

Citrus species*
Coreopsis (Calliopsis): Early Sunrise,

Moonbeam Flowering Dogwood American Dogwood Pampas Grass Cranberry Cotoneaster

Cotoneaster Bearberry Cotoneaster

Rockspray Cotoneaster

Hawthorne Lucifer Italian Cypress

White Trailing Ice Plant

Cooperi Pink Larkspur: Blue Elf

Dianthus; Maiden Pinks "Zing"

Cheddar Pink Hop Bush

Coneflower, Purple; Magnus

Silverberry Wintercreeper

Japanese Spindle Tree (Evergreen Euonymus)

Spreading Euonymus Japanese Aralia Border Forsythia Weeping Forsythia Greenstem Forsythia

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^{**} Not for use on container grown plants.

Gaillardia sp.

Gardenia jasminoides

Gaura sp.

Gentiana dahurica

Gladiolus spp.

Gypsophila repens

I will have a golf to The

Hedera helix

Hellanthemum sp.

Hemerocallis sp.

Hibiscus

Hibiscus sp.

Hibiscus Rosa-sinensis

Hosta plantaginea

H. Sieboldiana

Houttuynia cordata var. variegata

Hydrangea macrophylla

Ilex Bernyi

llex cornuta

l. crenata

I. opaca

I. vomitoria

Inula ensifolia

Iris ensata

Iris siberica

Iris spp.

Jasminium nudiflorum

Juniperus chinensis

J. conferta

J. davurica

J. horizontalis

Juglans sp.

Justicia brandegeana

Lagerstromia indica

Lagerstomia indica X Fauriei

Lantana montevidensis

Lavender sp.

Leontopodium alpinum

Ligustrum sinense

Ligustrum amurense

Common Name

Gaillardia, Blanket Flower: "Goblin"

Gardenia, Cape-Jasmine, Radicans

Gentian

. . . .

Gladic' is species * *

Baby's Breath

English Ivy

Sunrose

Daylily: Aztec Gold, Stella De Oro, Tender

Love

Rose of Sharon**

Mallow: Disco Belle White

Chinese Hibiscus

Hosta, Plantain Lily (Fragrant)

Hosta, "Searsucker"

Bigleaf Hydrangea

Holly

Chinese Holly

Japanese Holly; Helleri

American Holly

Yaupon Holly; Schillings

Sword-Leaved Iris; Jodlesong

Siberian Iris: Cabernet

Iris species **

Winter Jasmine

Chinese Juniper; Nick's Compact, Parsonnii

Shore Juniper; Blue Pacific

Parsoni

Creeping Juniper

Walnut*

Shrimp Plant

Crape Myrtle

Crape Myrtle; Tuscarora

Weeping Lantana

Lavender; Munstead

Edelweiss

Chinese Privet; Variegata

Amur Privet

^{*} Do not use on food producing trees, vines, or plants.

^{* *} Not for use on container grown plants.

L. japonicum

L. lucidum

Lillium sp.

Liriope Muscari

Liriope Muscari var. variegata

Liriope spicata Lobelia Cardinalis

Lonicera japonica L. tatarica

Loropetalum chinense

Lythrum sp. Magnolia spp.

Maleophora luteola

Malus sp.

Miscanthus sinensis Nandina domestica

Narcissus spp. Nerium oleander Olea europaea

Ophiopogon japonicus Osmanthus heterphyllus Osteospermum fruticosum Oxydendrum arboreum

Pennisetum setaceumi Perovskia atriplicifolia

Paeonia suffruticosa

Persea americana Photinia Fraseri

Physotegia Viginiana

Picea spp. Pieris japonica Pinus brutia P. canariensis

P. elliottii P. halepensis P. nigra

P. myra
P. palustrus
P. radiata

P. Thunbergiana

P. strobus

Common Name

Japanese Privet

Glossy Privet (Waxleaf)

Lily: Jazz

Big Blue Lily; Turf; Silver Mound; Evergreen

Giant

Liriope, Variegated

Liriope, Creeping

Cardinal Flower, Indian Pink

Japanese Honeysuckle Tatarian Honeysuckle

Burgundy

Loosestrife; Modern Pink

Magnolia species **

Ice Plant
Crabapple*

Yaku Jima, Silberfeder

Heavenly Bamboo

Narcissus species * *

Oleander Olive*

Mondo Grass

Osmanthus (False Holly): Gulf Tide

Trailing African Daisy

Sourwood Tree Peony

Fountain Grass (Dwarf)

Avocado*

Frasier's Photinia (Redtip) Dragonhead, False; Vivid

Spruce species * * (Colorado Blue, Norway, etc.)

Lily-of-the-Valley Bush

Calabrian Pine Canary Island Pine

Slash Pine
Aleppo Pine
Austrian Pine
Longleaf Pine
Monterey Pine
Japanese Black Pine

Japanese Black Pine Eastern White Pine

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P. sylvestris

P. taeda

P. virginiana

Pistachio sp.

Pittosporum rhombifolium-

P. tobira

Podocarpus macrophyllus

Prunus Laurocerasus

Prunus sp.

Pseudotsuga Menziesii

Pyracantha coccinea

P. Fortuneana

P. Koidzumii

Pyrus sp.

Quercus Shumardii

Quercus spp.

Raphiolepis indica

Raphiolepsis umbellata

Rhododendron

Rosa Banksiae

Rudbeckia sp.

Saxifraga sp.

Scabiosa sp.

Sedum album

Sedum cauticola

Sedum spurium

Spiraea Bumalda

Sedum dasyphyllum

Santolina virens

Rosmarinus officinalis

(including Azalea)

Common Name

Scotch Pine

Loblolly Pine

Virginia Pine

Pistachio*

Queensland Pittosporum

Japanese Pittosporum

Japanese Yew

English Laurel

Almond, Apricot, Nectarine,

Peach, Plum and Prune*

Douglas Fir**

Firethorn (Scarlet)

Firethorn

Firethorn

Bradford Pear sp.

Oak, Shumard's Red

Oak species

Indian Hawthorne

Yedda Hawthorn

'Coral Bells'

'Delaware Valley White'

'Flame Creeper'

'Formosa'

'Girard Crimson'

'George L. Tabor'

'Hino-crimson'

'PJM'

'Roseum Elegans'

'Wakeiebisu'

'White Gumbo'

Lady Bank's Rose

Rosemary*

Black-Eyed Susan; Goldstrum

Santolina

Saxifrage; Purple Dome

Pincushion Flower

Stonecrop

Stonecrop; Lidakense

Stonecrop

Stonecrop; Dragon's Blood

Spirea: Anthony Waterer

^{*} Do not use on food producing trees, vines, or plants.

^{**} Not for use on container grown plants.

Syzygium paniculatum

Taxus cuspidata

T. media

Teucrium sp.

Thalictrum dipterocarpum *

Thuja occidentalis

Trachelospermum asiatum

Tsuga canadensis

Tulipa spp.

Veroniac sp.

Viburnum japonicum

V. odoratissimum

V. plicatum

V. rigidum

V. suspensum

V. tinus

V. trilobium

V. wrightii

Vinca major

Vinca minor

Vitis sp.

Weigela florida

Yucca aloifolia

Y. filamentosa

Common Name

Australian Brushcherry

Japanese Yew

Yew

Germander

Meadow Rue

American Arborvitae

Star Jasmine

Canada Hemlock

Tulip species

Veronica, Speedwell; Sunny Border

Japanese Viburnum

Sweet Viburnum

Japanese Snowball

Canary Island Viburnum

Arrowood Viburnum

Laurustinus

Cranberry Bush

Leatherleaf Viburnum

Greater Periwinkle, Vinca

Common Periwinkle, Vinca

Grape *

Old Fashioned Weigela

Spanish Bayonet, Yucca

Adam's Needle, Yucca

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REGAL CHEMICAL COMPANY Alpharetta, Georgia 30201

Regal Chemical Company warrants that this product conforms to the chemical descriptions on its label. When used in accordance with label directions under normal conditions, this product is reasonably fit for its intended purpose. Since timing, method of application, weather, plant and soil conditions, mixtures with other chemicals, and other factors affecting the use of this product are beyond our control, no warranty is given concerning the use of this product contrary to label directions or under conditions which are abnormal or nor reasonably foreseeable. The user assumes all risks of any such use.