



Retard[®]

Liquid Growth Retardant

ACTIVE INGREDIENT:

Potassium salt of 6-hydroxy-3-(2H)-pyridazinone* 30.2%
OTHER INGREDIENTS: 69.8%
TOTAL: 100.0%

This product contains 2.25 pounds of Maleic hydrazide equivalent per gallon.

* Hereafter called Potassium salt of Maleic hydrazide.

KEEP OUT OF REACH OF CHILDREN

CAUTION

See **FIRST AID** Below

EPA Reg. No. 19713-1

EPA Est. No. 19713-TN-1

Net Content:

2.5 Gals. (9.46 L)

FIRST AID

IF SWALLOWED:

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15 to 20 minutes.
- Call a poison control center or doctor for treatment advice.

IF INHALED:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also call CHEMTREC at 800-424-9300 for emergency.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Causes moderate eye irritation. Harmful if swallowed, absorbed through skin or inhaled. Avoid contact with eyes, skin or clothing. Avoid breathing spray mist.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material including polyethylene or polyvinyl chloride, and
- Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for Agricultural Pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

Surface Water Advisory: Under some conditions, Maleic hydrazide may have a significant potential for runoff into surface water (primarily via dissolution in runoff water) for several days post-application. Conditions favoring runoff include poorly drained soils or wet soils with readily visible slopes, frequently flooded areas, areas where an intense or sustained rainfall is forecast to occur within 48 hours, areas overlying extremely shallow groundwater and areas overlying tiled drainage systems that flow to surface water.

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. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.



Manufactured By:
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 P.O. Box 13327, Memphis, TN 38113-0327
SINCE 1972

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AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS), 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about Personal Protective Equipment (PPE) and Restricted Entry Interval (REI). The requirements in this box only apply to uses of this product that are covered by the WPS.

Do not enter or allow worker entry into treated areas during the REI of 12 hours.

PPE required for early entry to treated areas that is permitted under the WPS and that involves contact with anything that has been treated, including plants, soil or water is: Coveralls, chemical-resistant gloves made of any waterproof material, and shoes plus socks.

PRODUCT INFORMATION

RETARD can be used along highways, airports, military installations, golf course fairways, roughs and similar areas.

This product is not corrosive to spray equipment.

USE PRECAUTION

At 40°F and below, the formulation will form solids. It readily redissolves, but must be warmed to 50°F or above. The larger the container, the more time is needed to completely redissolve the precipitate.

USE RESTRICTIONS

- Do not pasture livestock in or cut hay from treated areas.
- Do not feed treated foliage to livestock or graze treated areas.

FOR INHIBITION OF GROWTH OF TREES, SHRUBS AND IVY

This product will inhibit growth of various trees, shrubs and Ivy. Prune the plants first into the desirable shape. After regrowth of 2 to 4 inches occurs, spray on this product. This product can also be applied in the Spring as soon as new leaves have expanded. The following tree species can be treated: Alder, Elm, Oak, Poplar, Sweet gum, Sycamore, Tamarack and Willow.

The following shrubs can be treated: Algerian ivy, Cissus, Eugenia, Forsythia, Hahns ivy, Honeysuckle, Ice plant, Myrtus, Pittosporum, Privet, Pyracantha, Viburnum and Xylosoma.

Do not spray on trees when wind velocity exceeds 15 miles per hour.

HOW TO APPLY

Add 1.3 gallons of this product to 100 gallons of water. Spray the solution in the upper half of the tree if top terminal growth is to be inhibited. If the side of the tree is to be inhibited, spray half of the tree on the pruned side. For shrubs and Ivy, spray all surfaces of the leaves and bark. Apply solution to shrubs and Ivy at a rate of 100 gallons per acre or to trees at a rate of 200 gallons per acre. Wet all surfaces of leaves and bark.

Compressed Air Shoulder Sprayer: Add 4 tablespoons of this product to 1 gallon of water and apply the solution to shrubs at a rate of 100 gallons per acre or to trees at a rate of 200 gallons per acre. Hose-end attachments can be used to spray trees and shrubs. Wet all surfaces of leaves and bark. Consult instructions on applicator for delivering the equivalent of 1.3 gallons of this product in 100 gallons of water (equals 4 tablespoons of this product in 1 gallon of water).

10X Concentrate Spray: Concentrate spray equipment can be used replacing 90% of the water normally used in dilute sprays. Consult manufacturer for specific instructions if you plan to use a concentrate spray.

When to Spray Trees and Shrubs: Best results are obtained when the spray is applied to vigorous new growth. For example:

1. In the Spring, just as the new leaves have expanded and new growth has started.
2. In the Summer, after pruning and new regrowth is 2 to 4 inches in length.

HOW THIS PRODUCT INHIBITS GRASS GROWTH

This product is absorbed into the green grass blades and translocated by the plant fluids to the active growth areas of the plant where cell division is retarded. This product prevents seed head formation and slows down leaf growth. If an area is not mowed after this product is applied, the Turf will slowly grow to 6 or 12 inches in height by the end of the growing season as the effect of this product gradually "wears off". If this product is not applied before the seed head is formed, the seed head will expand in spite of the presence of this product. If this occurs, allow at least one week for this product to circulate throughout the plant. Then mow the area no less than 4 inches in height. Inhibition of subsequent growth will then be observed. If a neatly clipped appearance is required, supplement the application of this product by mowing.

HOW TO APPLY

Apply this product to green grass since brown grass will not absorb the spray. Use of this product is limited to one application per year made either in the Fall or the Spring followed by correct maintenance procedures to produce required Turf growth control.

Spring Application (about April 10 to June 1): Use 1.3 gallons of this product in 50 gallons of water per acre to reduce or eliminate mowing. The two week period in the Spring when the grass has grown 2 to 4 inches is ideal for applying this product. This is the period when Dandelion and Forsythia are in full bloom. The grass is in a vigorous growing condition and will absorb the chemical at the maximum rate. It will prevent seed head formation and inhibit growth of foliage. If spraying is delayed beyond this period, a mowing may be required to trim the area to improve appearance. Allow one week for translocation of the chemical before this mowing. Do not spray newly mowed areas covered with debris as this will interfere with coverage and absorption, causing poor results.

Fall Application (about October 1 to November 15): Use 1.3 gallons of this product in 50 gallons of water per acre to reduce growth next season. The Fall treatment is applied to green grass before it becomes dormant. Since growth is inhibited the following Spring, the area will "green up" about two weeks later than untreated grass. Apply this product as close to the time the grass becomes dormant as possible, but when it is still green. Do not spray when there is a cover of fallen leaves as this will interfere with coverage and absorption, causing poor results. This product will control Wild onion, Garlic and biennial type weeds including Dandelion and Plantain when applied in the Fall. Do not apply during the Summer (June 1 to September 25) since most permanent grasses become partially dormant in the Summer. (The major reason for Summer mowing is the presence of annual grasses and weeds which will have to be controlled by herbicides or mowing since they are not present when this product is applied to the perennial grasses.)

CONTROL OF ANNUAL BLUEGRASS

To reduce *Poa annua* (Annual bluegrass) on golf course fairways, first mow area twice in normal sequence, usually 5 to 8 days apart. When third mowing is needed, before the first *Poa annua* seed heads appear, spray 0.25 gallon of this product in 30 to 40 gallons of water per acre. (If over 40 gallons of water is used per acre, the effectiveness may be reduced.) The effect of treatment should be evident in 8 to 10 days. This "light" treatment of this product eliminates or greatly reduces reseeding of *Poa annua* with little retarding of grass growth.

RYEGRASS IN BERMUDAGRASS

Excessive growth of Bermudagrass on golf greens is often a problem in the Fall after verticutting, fertilization, overseeding and top dressing. Apply 0.6 gallon of this product in 50 gallons of water per acre in late September or early October to inhibit the growth of Bermudagrass and enable Rye or other grasses to produce a good stand. Apply this product with a calibrated boom sprayer. The Bermudagrass must be in good condition. Overseed no sooner than 48 hours after spraying.

TO INHIBIT GRASS ALONG EDGES OF HOME LAWNS

(See "Note" below.) Apply the equivalent of 0.3 gallon of this product in 100 gallons of water per acre in the Spring (about April 10 to June 1) to a 6 inch band along sidewalks and edges of shrubs and trees. For compressed air shoulder sprayer, add 4 tablespoons of this product in 1 gallon of water and spray a 6 inch band 800 feet long. Hose-end attachments can be used for edging of lawns. Consult instructions on applicator for delivering the specified dosage by edging.

TO CONTROL WILD ONIONS AND WILD GARLIC IN LAWNS AND GRASS AREAS ALONG HIGHWAYS (Not Pasture or Crop Land)

Apply 1 to 2 gallons of this product in 20 to 100 gallons of water per acre in the Spring or Fall when about 90 to 95% of the bulbs have started regrowth. Use on lawns only when grass is brown and dormant. For control of Wild onions and Garlic, do not apply to young seedlings less than one season old or Winter pastures consisting of small grains including Rye.

EQUIPMENT TO APPLY THIS PRODUCT

It is essential that this product be applied uniformly with the proper equipment.

Equipment

1. In all cases, equip trucks with a special speedometer or tachometer reading from 0 to 15 miles per hour. Truck speedometers are often inaccurate at this low speed. Use a centrifugal pump with a capacity of 100 gallons per minute and 50 pounds nozzle pressure plus off-center nozzles to apply this product. A series of nozzles activated by

valves controlled within the cab permits application at 10 to 15 miles per hour covering all types of terrain found along highways. The off-center nozzle will cover up to 30 feet from the road on calm days.

2. Booms:

- a. The Burg-Bean boom gives excellent coverage when properly calibrated and operated. Smaller amounts of water (30 to 50 gallons per acre) may be used when applying this product with booms.
 - b. Small booms mounted on tractors or jeeps are satisfactory when properly fitted with nozzles, calibrated and operated. Booms are advised only when there are few or no obstructions.
3. Air Carry Method (Modified Air Blast Sprayer): This is the newer method for applying this product. Large, low-pressure droplets ride the air stream and deposit this product on the difficult-to-mow areas. It is the only equipment that will economically and satisfactorily apply this product over wide areas (up to 90 feet). It will easily cover all types of terrain on shoulders and medians.

Use of 2,4-D

2,4-D may be used with this product when control of broadleaf weeds is desired in Turf. A low-volatile ester or amine salt formulation is compatible with this product. In some areas, weeds may emerge after this product is applied. A second application of 2,4-D would be necessary to control these weeds. Use 2,4-D only on grasses specified by the manufacturer's label. Follow manufacturer's label when handling or spraying 2,4-D to prevent drift.

EFFECT OF RAIN ON TREATMENT

Apply this product during a period when rain is not expected for 12 hours after treatment. Since this product is water-soluble, rain will wash the chemical off the leaf blade before absorption occurs. Once this product is absorbed, rain has no effect on performance.

WHERE TO USE THIS PRODUCT

Use this product on good Turf, three or more years old, that needs frequent mowing and areas difficult to mow. This product will improve the safety of mowing by reducing the need for frequent mowing of hazardous locations and eliminating mowing of cuts and frills where a seasonal growth from 6 to 11 inches can be tolerated.

CONDITIONS AFFECTING ABSORPTION OF THIS PRODUCT BY GRASS

It has been found that a greater amount of this product will enter the leaf in the shortest time and give the best results when the plants are growing rapidly in moist soil. This product is not absorbed under the following conditions:

1. When leaves are wilted.
2. During periods of extended drought and when the soil is dry.

NOTE

At label specified application rates, this product does not normally affect the color of the grass. Under conditions of optimum absorption, color modification for a period of several weeks may be encountered. At times, treated grass may be a greener color than untreated grass. It may also remain greener for a longer period under drought conditions. No adverse effects on color have been observed from a Fall application. Some delay in Spring "green up" is normal.

STORAGE AND DISPOSAL

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

STORAGE: Store under lock and key in a ventilated room and secure from access by unauthorized persons and children. Store in a cool, dry area away from any heat or ignition source. Do not stack containers over 2 pallets high. Move containers by handles or cases. Do not move containers from one area to another unless they are securely sealed. Keep containers tightly sealed when not in use. Keep away from any puncture source. Avoid storage near water supplies, food, feed and fertilizer to avoid contamination. Avoid contamination with oxidizing materials. Store in original containers only. If the contents are leaking or material is spilled, follow these steps:

1. Contain spill. Absorb with a material including sawdust, clay granules or dirt.
2. Collect and place in suitable containers for disposal.
3. Wash area with soap and water to remove remaining pesticide.
4. Follow washing with clean water rinse.
5. Place a leaking container in plastic tub and transfer contents, as soon as possible, to an empty, original container.
6. Do not allow runoff to enter sewer or contaminate water supplies.
7. Dispose of waste as indicated below.

PESTICIDE DISPOSAL: To avoid wastes, use all materials in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often, such programs are run by state or local governments or by industry).

(Continued)

STORAGE AND DISPOSAL (Cont.)

CONTAINER HANDLING:

Nonrefillable Container (rigid material; less than 5 gallons):

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Container (rigid material; 5 gallons up to < 250 gallons):

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container one-fourth full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Dispose of empty container in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Refillable Container (≥ 250 gals. & Bulk):

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

WARRANTY—CONDITIONS OF SALE

OUR DIRECTIONS FOR USE of this product are believed adequate and reliable. Follow directions carefully. However, it is impossible to eliminate all risks 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 the Manufacturer of Seller. All such risks shall be assumed by the user or Buyer.

To the extent consistent with applicable law, Manufacturer or Seller makes no other warranties, expressed or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. To the extent consistent with applicable law, in no case shall the Manufacturer or Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. The foregoing is a condition of sale by the Seller and is accepted as such by the Buyer.