GORDON'S PROFESSIONAL
TURF & ORNAMENTAL PRODUCTS

ATRIMMEC®
PLANT GROWTH REGULATOR

For Systemic Chemical Pinching & Pruning of Ornamental Plants

ACTIVE INGREDIENT:

Dikegulac-sodium (Sodium salt of 2,3:4,6-bis-O-(1-methylethylidene)-*a*-L-xylo-2-hexulofuranosonic acid)	18.5%
INERT INGREDIENTS:	81.5%
TOTAL	100.0%

Contains 1.67 lb. dikegulac-sodium per gallon or 200 grams active ingredient per liter.

Contains 17% equivalent of the free acid.

ATRIMMEC® is a registered trademark of PBI/GORDON CORPORATION.

KEEP OUT OF REACH OF CHILDREN

CAUTION

See below for additional Precautionary Statements and Statement of Practical Treatment.

662/10-2000 AP111495
EPA REG. NO. 2217-776

Manufactured By
pbi/gordon corporation
An Employee-Owned Company
1217 West 12th Street
Kansas City, Missouri 64101

STOP! **READ THE ENTIRE LABEL FIRST. OBSERVE ALL PRECAUTIONS AND FOLLOW DIRECTIONS CAREFULLY.**

PRECAUTIONARY STATEMENTS

Hazards to Humans & Domestic Animals

CAUTION: May be harmful if inhaled. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists. Do not use on food or fodder crops.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations
Users should:
- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Environmental Hazards

For terrestrial uses, do not apply directly to water, or 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 washwater.

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 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.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR part 170.

This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and 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 and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

For early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear: coveralls, waterproof gloves, and shoes plus socks.

STORAGE & DISPOSAL

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

Storage: Store in original container in a locked storage area. Keep from freezing. To prevent cross-contamination, do not store near other pesticides, fertilizers, seeds, food or feed.

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: For plastic containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed, by state and local authorities, by burning. If burned, stay out of smoke.

ATRIMMEC® PLANT GROWTH REGULATOR IS EASY TO USE
- Mix with water in a well-rinsed sprayer. Finished spray should be used the same day it is prepared. Do not mix ATRIMMEC with fertilizers or other chemicals.
- A surfactant is incorporated in the product. No additional wetting agent is needed.
- Plant foliage should be dry when spray is applied.
- On very hot, sunny days, spray preferably early in the morning or late in the afternoon.
- Spray entire plant until wet. Thorough coverage of foliage is the key to good results.
- Avoid spray drift to neighboring plants.
- After spray has dried, respraying may overdose previously treated plants. Be careful to avoid overlapping treatment of plants.
- If treated plants are subject to rainfall or overhead irrigation within 6 hours after spraying, effectiveness may be reduced.
- Trimming *after* applying ATRIMMEC may interfere with the action of the product.

ATRIMMEC FOR GREENHOUSE AND NURSERY CROPS

WHAT ATRIMMEC DOES

ATRIMMEC is a systemic plant growth regulator applied as a foliar spray that reduces or breaks apical dominance and enhances lateral branching.

ATRIMMEC is absorbed through the leaves and translocated to the shoot tips. Pinching effect is limited to sprayed branches.

ATRIMMEC will chemically pinch unpruned shoots and will also increase branching of trimmed shoots.

ATRIMMEC produces full, well-branched plants with more abundant bloom.

ATRIMMEC reduces the need for mechanical pinching and pruning.

CONSIDERATIONS WHEN USING ATRIMMEC FOR GREENHOUSE AND NURSERY CROPS
- Best response is obtained on lush spring growth or under good growing conditions. Avoid treating plants under cool weather conditions or extremely hot summer temperatures.

- Plants must be well rooted and actively growing. Do not treat wilted or dormant plants. Plants must be healthy and not under stress from drought, nutritional deficiency or disease. Avoid treating plants under conditions favoring root disease, such as standing water in poorly drained soil.
- ATRIMMEC should be applied on shorter, more tender new shoots than usually considered appropriate for hand pinching.
- For optimal results, remove any flower buds or flowers present, and trim all long shoots.
- ATRIMMEC is best absorbed by fully developed leaves. If plants have been heavily pruned at least two pairs of expanded leaves should remain on each shoot.
- For best results use ATRIMMEC on rooted cuttings or young liners. One application is usually sufficient to get good frame branching. Subsequent pinching of older plants can be done with ATRIMMEC to further improve branching.
- In frost-susceptible regions, the final treatment should be made sufficiently early in the season so that the new growth will harden off before frost.
- Overdosing with ATRIMMEC may result in marked chlorosis, necrotic terminal shoots and delayed regrowth. Underdosing may result in little or no pinching effect.

AFTER TREATING PLANTS WITH ATRIMMEC

- Allow sufficient time for the chemical pinching response. There is no visible effect for the first 7 to 10 days. Trimming or hand pinching after applying ATRIMMEC may interfere with the action of the product.
- One to two weeks after treatment, the terminal growth and young leaves will often show distinct yellowing or chlorosis. This is normal and indicates ATRIMMEC is working. This effect is transient and cannot be stopped by giving additional nutrients.
- ATRIMMEC-treated plants will not grow for some weeks and thus will require less fertilizer and water than hand-pinched plants, until the axillary buds break and new growth begins. Do not overfertilize and overwater during this period.
- If growing conditions favor disease, make preventive fungicide applications.
- Give the plants enough space and light for new shoots to develop after axillary buds have broken.
- Cuttings taken from ATRIMMEC-treated plants root and grow normally.

RECOMMENDATIONS FOR GREENHOUSE AND NURSERY ORNAMENTALS (TABLE 1)

Suggested use rates of ATRIMMEC vary with different species (Table 1). Where a dosage range is given, use a concentration in the lower part of the indicated range for tender, sensitive varieties; use a concentration in the higher part of the suggested range for vigorous, rank-growing varieties or if temporary retardation of growth is desired.

Sprays should be applied *either* to unpinched shoots when they reach 1 to 3 inches (3 to 8 cm) long *or* to trimmed plants within 3 days after cutting back new growth. Most plants should be treated only once per year.

Spray entire plant until wet. Thorough coverage of foliage is the key to good results. One gallon of finished spray solution covers 400 to 600 sq. ft.(1 liter per 10 to 15 sq. meters).

TABLE 1
CHEMICAL PINCHING OF GREENHOUSE AND NURSERY CROPS

SPECIES OF ORNAMENTAL PLANT	CONCENTRATION OF ATRIMMEC IN WATER fl. ozs. per gal.	approx. ml/liter
Abelia x grandiflora	½	4
Acacia farnesiana — Sweet acacia	1	8
Aeschynanthus — Lipstick vine	⅓ to ⅔	2½ to 5
Arborvitae — *Thuja occidentalis*	¼	2
Azaleas (Rhododendron hybrids)	2 to 4	15 to 30
Start treating rooted cuttings. Greenhouse azaleas may be treated several times during the first year of growth. For the final pinch treat no later than early July to avoid delayed bud development and subsequent bloom.		
Begonia — Elatior hybrids.		
Begonia x cheimantha	½ to 1	4 to 8
Treat unpinched plants with 2 to 3 inch (5-8 cm) long shoots 8 to 10 weeks before finishing for sale. Rooted leaf cuttings can also be treated.		
Bottlebrush — *Callistemon lanceolatus*	1 to 2	8 to 16
Bougainvillea — *Bougainvillea* spp.	1	8
Buddleia spp.— Butterfly bush	⅓ to 1	2½ to 8
Callistemon lanceolatus — Bottlebrush	1 to 2	8 to 16
Cherry-laurel — *Prunus laurocerasus*	1 to 2	8 to 16
Cissus spp.— Grape ivy	½ to 1	4 to 8
Clerodendrum spp.— Glorybower	⅔ to 1⅓	5 to 10
Cleyera japonica	2	16
Cotoneaster spp.	½ to 1	4 to 8
Crape myrtle — *Lagerstroemia indica*	1 to 2	8 to 16
For miniature crape myrtle varieties, use 1 fl. oz. of ATRIMMEC per gallon.		
Elaeagnus spp.	1 to 1½	8 to 12
Eugenia myrtifolia	1 to 1½	8 to 12
Euonymus spp.	½ to 1	4 to 8
Fatshedera lizei	¾ to 1	6 to 8
Forsythia spp.	1 to 2	8 to 16
Fuchsia hybrids	½ to 1½	4 to 12
Treat rooted cuttings with 2 to 3 pairs of leaves or as soon as branching becomes desirable, but not later than 10 to 12 weeks before finishing for sale.		
Gardenia jasminoides	1½ to 3	12 to 24
Gelsemium sempervirens	1 to 2	8 to 16
Glorybower — *Clerodendrum* spp.	⅔ to 1⅓	5 to 10
Grape ivy — *Cissus* spp.	½ to 1	4 to 8
Hedera helix — English ivy	1	8
Holly — *Ilex* spp.	⅔ to 2½	5 to 20
To induce branching treat vegetative growth in early spring.		
To prevent berry set on Japanese holly, *Ilex crenata*, use ⅔ to 1½ fl. oz. of ATRIMMEC per gallon at any time from prebloom, tight bud stage through midbloom.		
Ivy, English — *Hedera helix*	1	8
Ivy, Geranium — *Pelargonium peltatum*	1	8
Juniperus spp. — Juniper	¼ to ½	2 to 4
Kalanchoe hybrids	⅔ to 1½	5 to 12
To induce lateral branching, more compact growth with a greater number of inflorescences, treat 2 days after pinching the main shoot.		
Lagerstroemia indica — Crape myrtle	1 to 2	8 to 16
For miniature crape myrtle varieties use 1 fl. oz. ATRIMMEC per gallon.		
Lantana camara	½ to 1	4 to 8
Ligustrum spp. — Privet	½ to 1	4 to 8
Lipstick vine — *Aeschynanthus* spp.	⅓ to ⅔	2½ to 5
Oleander — *Nerium oleander*	1 to 1½	8 to 12
Osmanthus spp.	1 to 2	8 to 16
Pachystachys lutea— Shrimp plant	½ to 1	4 to 8
Treat 1 day after mechanical pinching.		
Pelargonium peltatum — Ivy geranium	1	8
Photinia fraseri	2 to 4	15 to 30
After mechanical pinching or trimming apply two treatments at a 10 to 14 day interval to induce lateral bud break.		
Pittosporum tobira	1 to 2	8 to 16
Privet — *Ligustrum* spp.	½ to 1	4 to 8
Prunus laurocerasus — Cherry-laurel	1 to 2	8 to 16
Pyracantha coccinea	2 to 3	16 to 24
Raphiolepis indica	1½ to 2½	12 to 20
Apply a single treatment or *two* treatments at a 10 to 14 day interval to induce lateral bud break.		
Schefflera arboricola	2	16
Shrimp plant — *Pachystachys lutea*	½ to 1	4 to 8
Treat 1 day after mechanical pinching.		
Thuja occidentalis — Arborvitae	¼	2
Verbena hybrids	⅓ to ⅔	2½ to 5
Treat unpinched seedlings, or plants from cuttings 1 day after manual pinching.		
Viburnum spp.	1½ to 2	12 to 16
Xylosma spp.	1½ to 2	12 to 16

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to use of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

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.

ATRIMMEC — For Landscape Maintenance

WHAT ATRIMMEC DOES

ATRIMMEC is a growth retardant for use on hedges, shrubs, trees and groundcovers. It can also be used on certain trees and shrubs to prevent flowering and fruit set.

ATRIMMEC is a systemic plant growth regulator usually applied as a foliar spray. It is absorbed by the leaves and translocated to the shoot tips. Growth retardant effect is limited to sprayed branches.

ATRIMMEC solutions may also be injected into the trunks of larger trees to retard growth of certain broadleaf species along rights-of-way, city streets, parks, and other areas where there is need for reducing the frequency of manual pruning.

ATRIMMEC temporarily stops shoot elongation and promotes lateral branching. This reduces the need for trimming and pruning. It can also improve the appearance of landscape ornamentals by gradually filling in growth and providing a more uniform, compact shape.

CONSIDERATIONS WHEN USING ATRIMMEC FOR LANDSCAPE MAINTENANCE

LOOKING FOR A FORMAL APPEARANCE?

Trim the shrub or groundcover to shape, leaving at least two pairs of expanded leaves on each shoot to absorb the spray. Apply ATRIMMEC within three days.

LOOKING FOR A MORE NATURAL APPEARANCE?

Either trim only the long, wild shoots and immediately apply ATRIMMEC spray *or* trim shrub or groundcover to shape, allow the new shoots to grow at least two inches (5 cm), and then apply ATRIMMEC spray.

RESPONSES WITH ATRIMMEC

After an application of ATRIMMEC in spring, plants can usually be maintained in acceptable shape for a full season. Under extremely good growing conditions or in areas with a long growing season, two treatments per year may be considered on certain species. However, in areas with a short growing season only a single spring treatment is recommended.

Plants must be well rooted and actively growing. Do not treat wilted or dormant plants. Plants must be healthy and not under stress from drought, nutritional deficiency or disease. Avoid treating slow growing plants under cool weather conditions or extremely hot summer temperatures.

Best response is obtained on lush spring growth or under good growing conditions.

Temporary reduction or suppression of flowering may be observed in shrubs and groundcovers such as alyssum, oleander, star jasmine and gazania, but normal bloom returns 3 to 6 weeks after spraying.

Chlorosis of the growing tip and terminal growth may occur a few weeks after the spraying of some species. This is usually transient but may persist up to 6 weeks on certain shrubs such as forsythia, oleander and privet. Fully expanded foliage is not affected.

Overdosing with ATRIMMEC may result in marked chlorosis and necrotic terminal shoots. Underdosing may result in little or no growth retardant effect.

RECOMMENDATIONS FOR GROWTH CONTROL OF LANDSCAPE ORNAMENTALS (TABLE 2)

Suggested use rates of ATRIMMEC vary with different species (Table 2). Where a dosage range is given, use a concentration in the lower part of the indicated range for tender, sensitive varieties; use a concentration in the higher part of the suggested range for vigorous, rank-growing varieties.

Spray volume will vary with the size of plants and amount of foliage. Spray to wet. On hedges, shrubs and groundcovers one gallon of finished spray solution covers 400 to 600 sq. ft. (1 liter per 10 to 15 sq. meters). Small trees up to 16 ft.(5 meters) tall require 1 to 5 gallons (5 to 20 liters) per tree. Larger trees 20 to 30 ft. (6 to 9 meters) in height will require 10 to 15 gallons (40 to 60 liters) of finished spray solution per tree. Thorough coverage provides the best results.

TABLE 2
GROWTH CONTROL OF LANDSCAPE ORNAMENTALS

SPECIES OF ORNAMENTAL PLANT	CONCENTRATION OF ATRIMMEC IN WATER fl. ozs. per gal.	approx. ml/liter
Arborvitae *(Thuja occidentalis)*	1	8
Abelia *(Abelia x grandiflora)*	1	8
Alyssum (*Alyssum* spp.)	2	16
Ash, Arizona or Velvet *(Fraxinus velutina)*	1 to 2	8 to 16
Ash, Shamel *(Fraxinus uhdei)*	1 to 2	8 to 16
Barberry (*Berberis* spp.)	1	8
Bottlebrush (*Callistemon* spp.)	2 to 3	16 to 24

TABLE 2 (Continued)
GROWTH CONTROL OF LANDSCAPE ORNAMENTALS

SPECIES OF ORNAMENTAL PLANT	CONCENTRATION OF ATRIMMEC IN WATER fl. ozs. per gal.	approx. ml/liter
Bougainvillea (*Bougainvillea* spp.)	2	16
Temporary suppression of flowering may be observed 3 to 6 weeks after spraying		
Buddleia spp. (Butterfly bush)	1 to 2	8 to 16
Butterfly bush (*Buddleia* spp.)	1 to 2	8 to 16
Callistemon spp. (Bottlebrush)	2 to 3	16 to 24
Cape honeysuckle *(Tecomaria capensis)*	2 to 3	16 to 24
Cherry-laurel (*Prunus* spp.)	2 to 3	16 to 24
Cotoneaster (*Cotoneaster* spp.)	1 to 2	8 to 16
Crataegus spp. (Hawthorn)	1 to 2	8 to 16
Cypress (*Cupressus* spp.)	1	8
Elaeagnus (*Elaeagnus* spp.)	2 to 3	16 to 24
Elm, Chinese *(Ulmus parvifolia)*	2	16
Elm, Siberian *(Ulmus pumila)*	1 to 2	8 to 16
Euonymus (*Euonymus* spp.)	2 to 3	16 to 24
Eugenia *(Eugenia myrtifolia)*	2	16
Ficus *(Ficus repens)*	2 to 3	16 to 24
Fig, Laurel *(Ficus nitida)*	2	16
Firethorn (*Pyracantha* spp.)	2 to 3	16 to 24
Forsythia (*Forsythia* spp.)	2	16
Treat only spring growth. Summer treatments may retard flower bud set and development		
Fraxinus velutina (Arizona or Velvet Ash)	1 to 2	8 to 16
Fraxinus uhdei (Shamel Ash)	1 to 2	8 to 16
Gazania (*Gazania* spp.)	2	16
Hardy orange *(Poncirus trifoliata)*	2	16
Hawthorn (*Crataegus* spp.)	1 to 2	8 to 16
Hedera canariensis (Algerian Ivy)	2 to 3	16 to 24
Hedera helix (English Ivy)	2	16
Holly (*Ilex* spp.)	2 to 3	16 to 24
Use 3 fl. oz. of ATRIMMEC per gallon for growth control of Yaupon holly *(Ilex vomitoria)*		
Avoid spraying Japanese holly *(Ilex crenata)* just before or during the flowering period if berry display is desired.		
Honeysuckle (*Lonicera* spp.)	3	24
Ivy, Algerian *(Hedera canariensis)*	3	24
Ivy, English *(Hedera helix)*	2 to 3	16 to 24
Jasmine, Star *(Trachelospermum jasminoides)*	2	16
Orange jessamine *(Murraya paniculata)*	2	16
Juniper (*Juniperus* spp.)	1	8
Lantana *(Lantana camara)*	1 to 2	8 to 16
Ligustrum (*Ligustrum* spp.)	1 to 2	8 to 16
Use 2 fl. oz. of ATRIMMEC per gallon on waxleaf privet *(Ligustrum japonica "Texanum")*		
Lippia, Creeping *(Phyla nodiflora canescens)*	2	16
Lonicera spp. (Honeysuckle)	3	24
Morus alba (Mulberry)	2	16
Mulberry, White *(Morus alba)*	2	16
Murraya paniculata (Orange Jessamine)	2	16
Oleander *(Nerium oleander)*	1 to 2	8 to 16
Osmanthus (*Osmanthus* spp.)	2	16
Periwinkle *(Vinca minor)*	2	16
Photinia, Red tip *(Photinia fraseri)*	3	24
Pittosporum *(Pittosporum tobira)*	2	16
Podocarpus, Yew *(Podocarpus macrophyllus)*	2	16
Poncirus trifoliata (Hardy Orange)	2	16
Privet (*Ligustrum* spp.)	1 to 2	8 to 16
Use 2 fl. oz. of ATRIMMEC per gallon on waxleaf privet *(Ligustrum japonica "Texanum")*		
Prunus spp. (Cherry-laurel)	2 to 3	16 to 24
Raphiolepis *(Raphiolepis indica)*	2 to 3	16 to 24
Tecomaria *(Tecomaria capensis)*	2 to 3	16 to 24
Thuja occidentalis (Arborvitae)	1	8
Trachelospermum jasminoides (Star Jasmine)	2	16
Ulmus parvifolia (Chinese Elm)	2	16
Ulmus pumila (Siberian Elm)	1 to 2	8 to 16
Viburnum (*Viburnum* spp.)	2 to 3	16 to 24
Vinca minor (Periwinkle)	2	16
Willow (*Salix* spp.)	1 to 2	8 to 16
Xylosma (*Xylosma* spp.)	2 to 3	16 to 24

RECOMMENDATIONS FOR SUPPRESSION OF FLOWER AND FRUIT FORMATION (TABLE 3)

ATRIMMEC spray applied prebloom or during the flowering period of certain ornamentals reduces or eliminates bloom and prevents fruit set.

Certain landscape trees and shrubs are allergenic during bloom. Ripe fruit falling on sidewalks, streets and parked cars present a difficult clean-up problem which can often be reduced or prevented with a single spray treatment.

The spray concentration and timing of treatments are given in Table 3 for each species of tree or shrub. ATRIMMEC treatment is generally ineffective for these purposes after fruit has begun to set.

Foliar injury may occur if ATRIMMEC is applied to drought-stressed trees. Treat healthy, vigorously growing trees only.

Complete spray coverage is essential for good results. See suggested spray volumes indicated for growth control of landscape ornamentals.

TABLE 3 SUPPRESSION OF FLOWER AND FRUIT FORMATION	CONCENTRATION OF ATRIMMEC IN WATER	
SPECIES OF ORNAMENTAL PLANT	fl. ozs. per gal.	approx. ml/liter
Olive, ornamental *(Olea europaea)* . . . . . Treat at any time from prebloom period after floral rachis has elongated about ½ inch (1.3 cm) through early bloom. Best results are obtained in early spring during the tight bud stage of the prebloom period.	2½ to 5	20 to 40
Privet, glossy *(Ligustrum lucidum)* . . . . . Treat when flower parts have elongated 1 to 3 inches (2.5 to 7.5 cm), since subsequent vegetative growth will cover the dead floral rachis and maintain satisfactory appearance. Treatment at a later stage when flower parts are 4 to 6 inches (5 to 15 cm) leaves the dead floral parts visible for the remainder of the season.	⅔ to 1½	5 to 12
Rose, multiflora *(Rosa multiflora)* . . . . . Apply ATRIMMEC at any time from the prebloom period when plants are in full foliage and flower buds have formed through early bloom (10 to 15% bloom).	⅔ to 1½	5 to 12
Holly Japanese *(Ilex crenata)* . . . . . To prevent berry set apply at any time from prebloom, tight bud stage through midbloom.	⅔ to 1½	5 to 12

RECOMMENDATIONS TO RETARD GROWTH OF TREES BY TRUNK INJECTIONS (TABLE 4)

ATRIMMEC may be used to retard growth of certain broadleaf tree species along utility rights-of-way, city streets, parks, and other areas where there is a need for reducing the frequency of manual pruning. Tree growth is highly variable depending upon species, location, climatic factors, environmental conditions, and it is recommended that users establish by testing on a limited number of trees the best rates to produce the desired growth reduction under local growing conditions before large scale tree injection programs are pursued. For control of growth, solutions of ATRIMMEC are injected into the tree trunk as described below.

TIMING OF INJECTION

On deciduous trees, best results are obtained when winter trimmed or untrimmed trees are injected with ATRIMMEC solution after the first flush of leaves is ¾ to fully developed and before shoot growth begins. Broadleaf evergreens may be treated during seasonal flushes of growth.

MIXING

Pour the amount of ATRIMMEC indicated (Table 4) into a partially filled tank, then add the necessary quantity of water to complete the desired volume of solution for injection.

EQUIPMENT

Best results are obtained when the total volume of injected ATRIMMEC is distributed evenly throughout the tree. The pressurized injection system developed by the United States Department of Agriculture, Nursery Crop Research Laboratory, Delaware, Ohio (G. K. Brown — 1978 *Journal of Arborculture* 4:7-13) has proven effective for injection of ATRIMMEC.

INJECTION TECHNIQUES

Trees that are 6 to 16 inches in DBH (diameter breast height) require 3 injection holes equally spaced around the tree trunk. Trees greater than 16 inches DBH require 6 injection holes. Holes should be in the zone between root flare and about 40 inches above the ground.

Drill injection holes horizontally into the trunk, so that the growth regulator will be injected into the outer sapwood to facilitate rapid uptake. Injection holes should not penetrate the wood more than 2½ inches and drill size should not exceed 7/32 inch. Use injection pressures of 100 to 200 psi to achieve rapid uptake of solution. Do not exceed pressure of 200 psi.

CONCENTRATION OF ATRIMMEC AND VOLUME INJECTED DILUTE SOLUTIONS

ATRIMMEC at the rates indicated for each tree species should be diluted with water to the required volume for injections.

When tree crown or leaf area is considered larger than normal, use concentrations in the higher part of the suggested range. For trees with very small crowns or leaf area, concentrations in the lower part of the suggested range should be used.

The volume of ATRIMMEC dilute solution injected is dependent upon the tree size. The total injection volume (TIV) of ATRIMMEC solution is determined by measuring the diameter of the tree at breast height (DBH) and utilizing one of the following formulas:

	Number of injection holes required	Total injection volume in ml (TIV)	Volume per injection hole
For trees 6-16 inches DBH	3	$TIV = (DBH)^2 \times 1.59$	$\frac{TIV}{3}$
For trees greater than 16 inches DBH	6	$TIV = DBH \times 25.25$	$\frac{TIV}{6}$

CONCENTRATE SOLUTION

More concentrated solutions of ATRIMMEC can be used for tree injection. These are prepared by increasing the amount of ATRIMMEC per unit volume by 2 to 4 times the amount recommended for dilute injection solutions and by reducing the TIV by a proportionate amount. The highest suggested concentration for tree injection is a 4X concentration in ¼ the volume calculated for dilute solutions.

PRECAUTIONS

Do not inject ATRIMMEC into drought-stressed trees or trees that do not appear healthy. Do not inject ATRIMMEC into bearing fruit or nut trees or sugar maple trees tapped for sugar.

TABLE 4 GROWTH CONTROL OF TREES BY TRUNK INJECTION	CONCENTRATION OF ATRIMMEC IN WATER	
SPECIES OF TREE	ml of ATRIMMEC diluted with water to 1 liter	fl. oz. ATRIMMEC diluted with water to 1 gallon
Sycamore *(Platanus occidentalis)*	60 to 90	8 to 12
London planetree *(Platanus acerifolia)*	60 to 90	8 to 12
Bigleaf, Norway, Red and Silver maples *(Acer macrophyllum, A. platanoides, A. rubrum and A. saccharinum)*	60 to 90	8 to 12
Eucalyptus (*Eucalyptus* spp.)	60 to 90	8 to 12
(Eucalyptus sideroxylon)	30 to 60	4 to 8
Cottonwood *(Populus deltoides)*	60 to 90	8 to 12
Shamel ash *(Fraxinus uhdei)*	175 to 250	23 to 32
Hackberry *(Celtis occidentalis)*	225 to 375	30 to 50
Water oak *(Quercus nigra)*	250 to 500	32 to 64

LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants only that the chemical composition of this product conforms to the ingredient statement given on the label, and that the product is reasonably suited for the labeled use when applied according to the Directions for Use.

THE MANUFACTURER NEITHER MAKES NOR INTENDS ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE EXPRESSLY DISCLAIMED. This limited warranty does not extend to the use of the product inconsistent with label instructions, warnings or cautions, or to use of the product under abnormal conditions such as drought, excessive rainfall, tornadoes, hurricanes, etc. These factors are beyond the control of the manufacturer or the seller. Any damages arising from a breach of the manufacturer's warranty shall be limited to direct damages, and shall not include indirect or consequential damages such as loss of profits or values, except as otherwise provided by law.

The terms of this Limited Warranty and Disclaimer cannot be varied by any written or verbal statements or agreements. No employee or agent of the seller is authorized to vary or exceed the terms of this Limited Warranty and Disclaimer in any manner.

SAFETY DATA SHEET

Issue Date 12-Nov-2014 **Revision Date** 19-Oct-2015 **Version** 2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name Gordon's ATRIMMEC® Plant Growth Regulator

Other means of identification
Product Code PBI FP 662-5
EPA Pesticide Registration Number 2217-776

Recommended use of the chemical and restrictions on use
Recommended Use Growth regulator.
Uses advised against No information available.

Details of the supplier of the safety data sheet

Supplier	Manufacturer	Company Name
PBI Gordon Corporation 1217 West 12th Street Kansas City, MO 64101	PBI Gordon Corporation 1217 West 12th Street Kansas City, MO 64101	PBI Gordon Corporation 1217 West 12th Street Kansas City, MO 64101

Emergency telephone number
Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Dermal	Category 3
Skin sensitization	Category 1
Flammable liquids	Category 3

Label elements

Emergency Overview

Danger

Hazard statements
Toxic in contact with skin. May cause an allergic skin reaction.
Flammable liquid and vapor.

Appearance Liquid **Physical state** Liquid **Odor** Odorless

Precautionary Statements - Prevention
- Wear protective gloves/protective clothing/eye protection/face protection
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Contaminated work clothing should not be allowed out of the workplace
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep container tightly closed

Precautionary Statements - Response
- Call a POISON CENTER or doctor/physician if you feel unwell
- Wash contaminated clothing before reuse
- If skin irritation or rash occurs: Get medical advice/attention
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Precautionary Statements - Storage
- Store locked up
- Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
- Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Have the product label with you when calling a poison control center or doctor or going in for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.

The low flash point of this product is due to a minor component in the mixture. Based on independent laboratory testing of similar products, this product would not sustain combustion as specified in DOT Regulation 49 CFR 173 Appendix H; however OSHA HCS 2012 flammable classifications are solely based on tested mixture flash points and boiling points.

Other Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
2,3:4,6-Bis-O-(1-methylethylidene)-alpha-L-xylo-2-hexulofuranosonic acid, sodium salt (Dikegulac sodium)	52508-35-7	18.5
Trade Secret	Proprietary	0-10*

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General advice — In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If symptoms persist, call a physician.

Eye contact — Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing.

Skin Contact — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation — Remove to fresh air. Move to fresh air in case of accidental inhalation of vapors or decomposition products. If symptoms persist, call a physician.

Ingestion Do NOT induce vomiting. Drink plenty of water. Rinse mouth. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Self-protection of the first aider Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical
In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation, especially in confined areas. Take precautionary measures against static discharges. Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place.

Incompatible materials None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Liquid	**Odor**	Odorless
Color	Light blue	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	9.5	
Melting point/freezing point	No information available	
Boiling point / boiling range	100 °C / 212 °F	
Flash point	44 °C / 111 °F	
Evaporation rate	> 1	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	<17 mm Hg	
Vapor density	<1	
Specific Gravity	1.0951	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	

Decomposition temperature No information available
Oxidizing properties No information available

Other Information

Density 9.12 pounds/gallon

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization
Will not occur.

Conditions to avoid
Keep from freezing.

Incompatible materials
None known.

Hazardous Decomposition Products
None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation May cause irritation of respiratory tract.

Eye contact May cause irritation.

Skin Contact May cause irritation.

Ingestion May cause irritation.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
2,3:4,6-Bis-O-(1-methylethylidene)-alpha-L-xylo-2-hexulofuranosonic acid, sodium salt (Dikegulac sodium) 52508-35-7	= 18 g/kg (Rat)	> 1 g/kg (Rat) > 1 g/kg (Rabbit)	-

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity
Reproductive toxicity No information available.
STOT - single exposure No information available.

STOT - repeated exposure	No information available.
Chronic toxicity	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

Oral LD50	> 5000 mg/kg body weight
Dermal LD50	> 1000 mg/kg body weight
Inhalation LC50	25.24 mg/L Rat-male

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life

22% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.
US EPA Waste Number	D001

See Section 2: Hazards not otherwise classified (HNOC)

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT

Description	The following guidelines apply for domestic ground transport. If shipping by air or ocean, please contact our Transportation Dept. Inhibitors, Modifiers, or Regulators, Plant Growth - NMFC #101685 In our current available sizes, this product does not qualify as a Hazardous Material.

15. REGULATORY INFORMATION

U.S. EPA Label Information

EPA Pesticide Registration Number 2217-776

Federal Insecticide, Fungicide, Rodenticide Act Regulations

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label

Caution. Keep out of the reach of children. Causes moderate eye irritation. Avoid contact with eyes or clothing.

International Inventories

TSCA	Not Listed
DSL/NDSL	Not Listed
EINECS/ELINCS	Not Listed
ENCS	Not Listed
IECSC	Not Listed
KECL	Not Listed
PICCS	Not Listed
AICS	Not Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
2,3:4,6-Bis-O-(1-methylethylidene)-alpha-L-xylo-2-hexulofuranosonic acid, sodium salt (Dikegulac sodium)				X						X
Trade Secret	X	X		X		X	X	X	X	X

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

International Regulations

Mexico - Grade Moderate risk, Grade 2

16. OTHER INFORMATION

NFPA	**Health hazards** 2	**Flammability** 1	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 2	**Flammability** 1	**Physical hazards** 0	**Personal protection** X

Disclaimer
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End of Safety Data Sheet