

Katana

TURF HERBICIDE



Excellent post-emergence control of kyllingas, sedges and broadleaf weeds – as well as many grassy weeds. Outstanding transition-aid control of overseeded ryegrass.

Katana® Turf Herbicide controls kyllingas, sedges and broadleaf weeds with post-emergence and some pre-emergence activity. Highly selective in bermuda, zoysia, centipede, buffalo grasses and seashore paspalum, Katana is an excellent product for removal of overseeded cool-season grasses.

In addition, university trials prove Katana excels in controlling ryegrass, clumpy ryegrass, *Poa annua*, *Poa trivialis*, tall fescue and annual ryegrass in warm-season turf. Katana is more active in cooler temperatures than many competitive products.

The label list 58 weeds (sedges, grassy and broadleaf weeds). With a much broader spectrum of grassy and broadleaf weeds than other

products of its type, this makes it an excellent option for golf and commercial landscape maintenance in warm-season turf. Katana is absorbed through both the leaves (50%) and roots (50%). It is effective at very low rates.

Katana Turf Herbicide, is the latest addition to Gordon's® ProForm® product line of fast-acting herbicides. Like other products in this line, Katana continues to work in cooler weather by root uptake and is not as temperature dependent as other competitive products.

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- Outstanding control on kyllingas and annual sedges
- Excellent grassy weed control – clumpy ryegrass, fescue and *Poa annua*
- Controls wide range of broadleaf weeds
- Now also labeled for buffalograss and seashore paspalum
- More active in cooler temperatures than many competitive products
- Fast and thorough results
- Both foliar and root uptake
- For use on commercial turf and sports turf



RECOMMENDATIONS

For the removal of kyllingas, sedges, cool-season grasses and broadleaf weeds from tolerant grass species on golf courses (fairways, roughs and tees) and other non-residential turf areas such as industrial parks, sod farms, seed farms, cemeteries, professionally managed college sports fields, commercial lawns and professional sports fields.

ACTIVE INGREDIENTS:	By Wt.
Flazasulfuron*	25.0%
Other Ingredients	75.0%

*N-[[[4,6-dimethoxy-2-pyrimidinyl] amino]carbonyl]-3-(trifluoromethyl)-2-pyridinesulfonamide.

EPA Reg. No. 71512-12-2217

PACKAGING:

Plastic U.S. ounces: 4 X 3 per case:
shipping weight 1 lb.

READ LABEL BEFORE USE

The literature contained herein is not intended to be used as a substitute for the information contained on the label of the product container. Specimen labels and other literature are subject to revision. Before using this product, read and follow all label instructions on the container/package.

pbigordon.com/katana

Currently registered in:

AL, AR, AZ, CO, DE, FL, GA, HI, IL, IN, KS, KY, LA, MD, MS, MO, NE, NV, NJ, NM, NC, OH, OK, PA, SC, TN, TX, UT, VA, WV, and Guam.



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Not all products listed are available for purchase or authorized for use in every state. In addition, some states, counties and cities may require special licensing and training to sell, purchase or apply some of the products presented in this product literature. It is the responsibility of the distributor, retailer or professional applicator to verify, before product sale/purchase, that the product is approved for the use intended in their state, county and city.



Katana®

TURF HERBICIDE

ACTIVE INGREDIENT:	By Wt.
Flazasulfuron*	25.0%
OTHER INGREDIENTS:	75.0%
	TOTAL 100.0%

*N-[[[4,6-dimethoxy-2-pyrimidinyl] amino]carbonyl]-3-(trifluoromethyl)-2-pyridinesulfonamide.
Contains 0.25 pounds active ingredient per pound of formulated product.

KEEP OUT OF REACH OF CHILDREN CAUTION

Si Usted no entiende la etiqueta, busque a alguien para que se la explique a Usted en detalle. (If you do not understand the label, find some one to explain it to you in detail.)

Not Intended for Residential Use

READ ENTIRE LABEL CAREFULLY AND USE ONLY AS DIRECTED.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Harmful, if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing.

First Aid	
If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor for treatment 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 the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 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 inhaled:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by 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.	
HOT LINE NUMBER: For 24-Hour Medical Emergency Assistance call 1-877-800-5556.	

Personal Protective Equipment (PPE)

Applicators and other handlers must wear: long-sleeved shirt and long pants, shoes plus socks, protective eyewear and chemical resistant gloves made of any waterproof material.

User Safety Requirements

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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.

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.
- Users should remove PPE immediately after handling the product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This product is toxic to fish. 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 cleaning equipment or disposing of equipment wash waters or rinsate.

This product may contaminate water through drift of spray in wind, or drift of soil from treated areas. This product has a high potential for runoff for several weeks after application. Poorly drained soils and soils with shallow water tables are more prone to produce runoff that contains this product. Avoid applying this product to ditches, swales, and drainage ways. Runoff of this product would be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

There is potential for injury to sensitive plants irrigated with run-off water containing flazasulfuron.

No bee caution required.

Physical or Chemical Hazards

Do not use or store near heat or open flame.

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 (PPE) 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 4 hours.

PPE required 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, is: Coveralls, roughs, and shoes made of any waterproof materials, and shoes plus socks.

Sod and seed farms are within the scope of the Worker Protection Standard.

Non-Agricultural Use Requirements

The requirements in this box apply to uses 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. Turf grasses on golf courses and other non-residential turf areas such as industrial parks, tank farms, professionally managed college and professional sports fields and commercial lawns are not within the scope of the Worker Protection Standard. Do not enter or allow others to enter the treated area until sprays have dried.

Use Information

Katana® Turf Herbicide is a selective herbicide for removal of overseeded cool-season grasses as well as control of annual and perennial grasses, sedges, and broadleaf weeds in Bermudagrass, zoysiagrass, centipedegrass and certain other warm-season turfgrasses. This product has post-emergence and some pre-emergence activity. Katana Turf Herbicide may be used on golf courses (fairways, roughs, and tees) and the following non-residential turf areas: industrial parks, tank farms, sod farms, seed farms, cemeteries, professionally managed college and professional sports fields and commercial lawns for control of cool-season grasses and weeds from tolerant grasses.

Weed growth stops within hours after the application, however symptom progress from discoloration or chlorosis to necrosis generally requires from 3 to 6 weeks. Speed of control is generally a function of weather with faster action during warmer weather and actively growing weeds and turf.

Katana Turf Herbicide controls weeds by inhibiting the acetolactate synthase (ALS) biochemical process. Some weeds may contain naturally occurring populations that are resistant to ALS inhibiting herbicides. Applications of ALS inhibiting herbicides, when used alone, over a period of time may lead to biotypes that are resistant to ALS herbicides. This then leads to a reduction in the level of control obtained through the use of these herbicides. To prevent or delay the build-up of ALS resistant weeds, weed management programs should include the use of appropriate registered herbicides for control of these weeds that have a different mode of action. Applications of herbicides with a different mode of action should be used during the same year or in sequential years.

Application Restrictions

- Do not apply Katana Turf Herbicide aerially.
- Do not apply Katana Turf Herbicide through any irrigation system.
- Repeat applications may be made at 2 to 6 weeks after the application for optimum weed control.
- The maximum yearly application rate is 9.0 oz. per acre.
- Use only on turfgrasses listed below (unless listed under weeds controlled) or severe injury may result.
- Do not apply to new seeded, sodded or sprigged turfgrass until well established.
- Allow at least 2 weeks from the last application to the time of overseeding when applied at 1.5 oz./A. Allow 4 weeks for rates above 1.5 oz./A.

- Do not use on golf course putting greens.
- Some ornamental shrubs, plants and trees may be sensitive to Katana Turf Herbicide. Do not make applications that would result in direct contact or accumulation under the dripline of sensitive plants.
- Do not apply when grasses are under stress as injury may occur.
- Make applications to actively growing weeds and turf.
- Do not apply to saturated turf/soils.
- Do not apply to hydrophobic soils or turfgrass with excessive thatch accumulation, unless thorough aeration has been completed prior to application.
- Allow a 25 foot buffer of untreated turf to minimize tracking potential from mowing equipment.

Use Precautions Around Sensitive Grasses

- Use extreme caution when applying this product to slopes that drain onto sensitive turf grasses such as bentgrass, ryegrass, and Poa trivialis. Allow an adequate buffer zone of 25 feet between sensitive grasses and the treated area.
- The product should be dry on the leaf surface prior to allowing traffic on the treated area.
- Irrigation is not recommended within 6 hours after the application. However, for the next two mornings after application, if dew is present, irrigate lightly (0.1 to 0.2 inches) to remove the dew.

Spray Drift Management

- The applicator must be familiar with the effects of temperature inversions.
- Apply as a medium or coarser spray (ASAE Standard 572).
- AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND GROWER. The interaction of many equipment and-weather related factors determines the potential for spray drift. The applicator is responsible for considering all of these factors when making decisions. Where states have more stringent regulations, they must be observed.
- Do not treat areas where either possible downwind movement into the soil or surface washing may cause contact of Katana Turf Herbicide with bentgrass greens and stressed grasses.
- Avoid making applications when spray particles may be carried by air currents to areas where sensitive crops and plants are growing. Do not spray near sensitive plants if wind is gusty, below 2 mph, or in excess of 10 mph and moving in the direction of adjacent areas of sensitive crops or plants. Do not apply during temperature inversions. Always make applications when there is some air movement to determine the direction and distance of possible spray drift. Leave an adequate buffer zone of 25 feet between area to be treated and sensitive plants.
- To avoid injury to desirable plants, equipment used to apply Katana Turf Herbicide should be thoroughly cleaned (see PROCEDURE FOR CLEANING SPRAY EQUIPMENT) before reusing to apply any other chemicals.
- Apply using a nozzle height of no more than 2 feet above the ground or crop canopy.

INFORMATION ON DROPLET SIZE

The best drift management strategy is to apply large droplets and to limit or eliminate small droplets. Applying large droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see sections below).

CONTROLLING DROPLET SIZE

- Volume - Use sufficient volume to form droplets large enough to avoid drift potential.
- Pressure - Pressure and nozzle type and orientation should be carefully managed to avoid formation of fine droplets.
- Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Properly designed solid stream nozzles should produce the lowest drift potential. Select nozzles, which do not have a wide discharge profile.

CALIBRATION

Equipment should be calibrated regularly according to the manufacturer's specifications.

WIND

Applications must not be made when wind speed exceeds 10 mph. Use caution when applying in wind speeds less than 2 to 3 mph because a temperature inversion may be present and wind direction may vary. Many factors, including droplet size and equipment, determine drift potential at any wind speed. The applicator must be familiar with local wind patterns and must monitor wind conditions at the site at time of application.

SENSITIVE AREAS

It is the applicator's responsibility to exercise reasonable prudence when considering the potential for drift into any area, including sensitive areas (e.g. areas where people or non-target plants may be present, bodies of water, known habitat for threatened or endangered species, etc.).

TEMPERATURE AND HUMIDITY

Low humidity and high temperature increase the evaporation rate of droplets and therefore increase spray drift potential. The applicator should compensate for temperature and humidity.

TEMPERATURE INVERSIONS

Because of high drift potential, applications must not be made when droplets may reach a temperature inversion layer. **It is the applicator's responsibility to identify the presence of a temperature inversion at the time of application.** Accurate measurements of temperature, relative humidity, and wind speed help determine if an inversion exists. Local sources of weather information may help identify the presence of temperature inversions.

Mixing and Loading Instructions

Ensure the spray system is clean and free of residues from previous applications. Fill the spray tank 1/2 full with clean water. Ensure the agitation system is operating and sufficient to provide uniform spray mixing during application and until the spray tank has been emptied. Add the appropriate amount of this product to the spray tank. Complete filling the spray tank to the desired level.

Prepare no more spray mixture than is needed for the immediate application. Avoid the overnight storage of Katana Turf Herbicide spray mixtures.

Tank Mixtures

Katana Turf Herbicide may be tank mixed with most herbicides registered for use on labeled turfgrasses. Read and follow all manufacturer's label directions and restrictions for the companion product. Katana Turf Herbicide is generally compatible with other insecticides (non-organophosphate), fungicides, fertilizers and micronutrient products provided sufficient free water is available for dispersion of all the tank mix products. However, the physical compatibility of Katana Turf Herbicide with tank mix partners should be evaluated before use. Use tank-mix combinations only when applicator experience indicates that the tank mix will not result in objectionable turf injury.

The following have shown improved weed control in tank mixtures: Speedzone®, Trimec® Classic and Trimec® Plus, MSMA, 2,4-D Amine, Sencor®, Drive®, Pendimethalin.

For tank mixtures, add individual components to the spray tank in the following sequence: water, water dispersible granules (this product), water-soluble bags, dry flowables, emulsifiable concentrates, drift control additives, water-soluble liquids, and nonionic surfactants

Adjuvant Use Requirements

The use of a non-ionic surfactant at 0.25 percent by volume (1 qt/100 gal) provides maximum performance.

Spray Equipment Clean Out:

After spraying Katana Turf Herbicide and before using sprayer equipment for any other applications, the sprayer must be thoroughly cleaned using the following procedure.

1. Drain tank; thoroughly rinse inside of spray tanks with clean water (rinse about 1 minute per 25 gallons of tank capacity). Loosen and physically remove any visible deposits with a stiff brush.
2. Fill the tank with clean water and add 1 gallon of household ammonia (contains 3% active) for every 100 gallons of water. Circulate the cleaning solution through the tank and hoses for at least 15 minutes. Flush the cleaning solution through the hoses, boom and nozzles (1/4 volume of tank capacity) and then drain the tank.
3. Repeat step 1.
4. Repeat step 2.
5. Remove the nozzles and screen and clean separately in a bucket containing cleaning agent and water.
6. Rinse the tank, boom and hoses with clean water.
7. If only ammonia is used as a cleaner, the rinsate solution from both steps 2 and 4 may be applied back to the crop as recommended on the label. Do not exceed the maximum label use rate. If other cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on site or at an approved waste disposal facility. (Attention: Do Not use Chlorine bleach with ammonia as a dangerous gas will form).

Application Information

Broadcast: Katana Turf Herbicide may be applied as a broadcast treatment in a minimum of 20 gallons of water per acre. Higher spray volumes of 60 to 174 gallons of water per acre are recommended where weed populations are dense or with adverse growing conditions.

Spot Treatments With Backpack Sprayers: Dissolve 0.03 to 0.068 oz. (1 to 2 grams) of Katana Turf Herbicide per gallon of water, add 1 teaspoon of a nonionic surfactant and spray mixture at a rate of 2 gallons per 1000 sq. ft.

Rainfastness: Rainfall of one inch or greater within 3 hours of application to sensitive weeds and within 6 hours of application to less sensitive or larger weeds may necessitate reapplication of Katana Turf Herbicide or may result in reduced weed control.

Bermudagrass, Zoysiagrass, Centipedegrass, and Certain Other Warm-Season Turfgrasses*

Turf Tolerance
Katana Turf Herbicide may be used on the following warm-season established turfgrass cultivars:

Bermudagrass*: Champion, Common, Midiron, MS Express, MS Supreme, Princess, Quickstand, Riviera, Sahara, TiifSport, Tifway 419, TifGreen 328, Vamont, Yukon.
NOTE: Unacceptable injury may occur on FloraDwarf, TifDwarf and TifEagle.

Zoysiagrass*: Common, Emerald, El Toro, Meyer.

Centipedegrass: Maximum use rate of 1.5 oz/A to fully green, actively growing turf. Do not apply during spring and fall transition.

*Other cultivars should be tested on a small area to determine tolerance prior to large scale use.

Other warm-season grasses such as Argentine Bahiagrass, Carpetgrass, and St. Augustinegrass are intolerant.

Cool-season grasses such as Ryegrass, Fescue, Bentgrass and Kentucky Bluegrass are intolerant.

Removal of overseeded cool-season turfgrass from listed warm-season turfgrasses			
Species Controlled	Product Application Rate Ounces per 1,000 sq. ft.	Product Application Rate Ounces per acre	Spray Volume Gallons per acre
Perennial ryegrass	0.011 to 0.034	0.5 to 1.5	20 to 174 gal/Acre or 0.46 to 4 gal/ 1000 sq. ft.
Italian (annual) ryegrass	0.034	1.5	
<i>Poa trivialis</i>	0.051 to 0.068	2.25 to 3.0	
<p>Note: Applications for spring transition do not negatively impact Bermudagrass greenup. Katana Turf Herbicide shows a slight rate response with control occurring within 3 to 4 weeks after the application with the highest labeled rate giving better and faster control. Therefore, the Bermudagrass or zoysiagrass turf should be at 50 to 60% greenup at the time of the application for optimal maintenance of a green turf situation.</p> <p>Adjuvant Use Requirements The use of a non-ionic surfactant at 0.25 percent by volume (1 qt/100 gal) provides maximum performance.</p>			

Removal of volunteer cool-season grasses from listed warm-season turfgrasses			
Species Controlled	Product Application Rate Ounces per 1,000 sq. ft.	Product Application Rate Ounces per acre	Spray Volume Gallons per acre
Volunteer Ryegrass (clumpy ryegrass)	0.034 to 0.068	1.5 to 3.0	20 to 174 gal/Acre or 0.46 to 4 gal/ 1000 sq. ft.
Tall Fescue	0.034	1.5	
<p>Katana Turf Herbicide shows a slight rate response with the highest labeled rate giving better and faster control.</p> <p>Adjuvant Use Requirements The use of a non-ionic surfactant at 0.25 percent by volume (1 qt/100 gal) provides maximum performance.</p>			

Removal of Kyllingias and Sedges from listed warm-season turfgrasses			
Species Controlled	Product Application Rate Ounces per 1,000 sq. ft.	Product Application Rate Ounces per acre	Spray Volume Gallons per acre
Kyllingias (green, false-green, cockscomb and fragrant)	0.034 to 0.051	1.5 to 2.25	20 to 174 gal/Acre or 0.46 to 4 gal/ 1000 sq. ft.
Sedges (annual, globe, and yellow nutsedge)*	0.034 to 0.068	1.5 to 3.0	
Sedges: (purple nutsedge, cylindrical and rice flatsedge)**	0.068	3.0	
<p>*Repeat applications at 4 weeks may be necessary for new growth and consistent, long-term control. **Repeat applications at 4 weeks are necessary for new growth and consistent, long-term control.</p> <p>Adjuvant Use Requirements The use of a non-ionic surfactant at 0.25 percent by volume (1 qt/100 gal) provides maximum performance.</p>			

Removal of annual bluegrass (<i>Poa annua</i>) from listed warm-season turfgrasses			
Katana Turf Herbicide + Urea Nitrogen (46-0-0)			
<p>Katana Turf Herbicide can be used at reduced rates when applied in conjunction with urea nitrogen. The nitrogen should be in the form of urea 46-0-0 for improved control of <i>Poa annua</i>.</p> <p>1. Apply soluble urea fertilizer in a tank-mix with Katana Turf Herbicide. OR 2. Apply as a granular urea fertilizer within 1 day before or within 1 day after application of Katana Turf Herbicide.</p>			
Product	Product Application Rate Ounces per 1,000 sq. ft.	Product Application Rate Ounces per acre	Spray Volume
Katana Turf Herbicide + Urea (46-0-0)	0.023 to 0.034 oz + 0.25 to 0.75 lb ai Nitrogen per 1000 sq. ft.	1.0 to 1.5 oz/acre + (11.0 to 33.0 lb ai Nitrogen per acre)	20 to 174 gal/Acre or 0.46 to 4 gal/ 1000 sq. ft.
<p>Adjuvant Use Requirement: Katana Turf Herbicide plus nitrogen mixes must be applied with a non-ionic surfactant at 0.25 percent by volume (1 qt/100 gal) to provide maximum performance.</p> <p>Adjuvant Use Requirements The use of a non-ionic surfactant at 0.25 percent by volume (1 qt/100 gal) provides maximum performance.</p>			

(cont. on next column)

Removal of annual bluegrass (<i>Poa annua</i>) from listed warm-season turfgrasses (cont.)			
Katana Turf Herbicide used <i>without</i> urea nitrogen			
Species Controlled	Product Application Rate Ounces per 1,000 sq. ft.	Product Application Rate Ounces per acre	Spray Volume
Annual Bluegrass (<i>Poa annua</i>)	0.068	3.0	20 to 174 gal/Acre or 0.46 to 4 gal/ 1000 sq. ft.
<p>Applications made in the spring provide the best control. Applications made in the fall or winter seasons are slightly less effective.</p> <p>Adjuvant Use Requirements The use of a non-ionic surfactant at 0.25 percent by volume (1 qt/100 gal) provides maximum performance.</p>			

Rate Table For Weed Control (Quick-view)

Katana Turf Herbicide may be applied at rates from 1.5 to 3.0 oz/A for control of a large number of grass, sedge and broadleaf weeds. Broadcast applications must not exceed 0.068 oz per 1000 sq. ft. or 3.0 oz/A per application, with a maximum of three applications per season (9.0 oz/season). Some difficult to control weeds may require multiple applications. For best control apply Katana Turf Herbicide to grass and sedge weeds prior to initial tillering and when broadleaf weeds are young and actively growing.

Weed Species Controlled	Product Application Rate Ounces per 1,000 sq. ft.	Product Application Rate Ounces per acre	Spray Volume Gallons per acre
American burnweed	0.034	1.5	20 to 174 gal/Acre or 0.46 to 4 gal/ 1000 sq. ft.
Barnyardgrass	0.068	3.0	
Black medic	0.034	1.5	
Blue-eyed grass	0.034	1.5	
Bluegrass, annual (<i>Poa annua</i>)	See specific directions above		
Bluegrass, roughstalk (<i>Poa trivialis</i>)	0.051 to 0.068	2.25 to 3.0	
Bristly mallow	0.034	1.5	
Carolina geranium	0.034	1.5	
Catsear dandelion	0.034 to 0.068	1.5 to 3.0	
Chamberbitter	0.034 to 0.068	1.5 to 3.0	
Common chickweed	0.034	1.5	
Common periwinkle	0.034 to 0.068	1.5 to 3.0	
Common vetch	0.034	1.5	
Crabgrass, smooth (<4 leaf stage of growth)	0.068	3.0	
Crabgrass, southern	0.034 to 0.068	1.5 to 3.0	
Cutleaf eveningprimrose	0.068	3.0	
Dandelion	0.068	3.0	
Dogfennel	0.034	1.5	
Field madder	0.068	3.0	
Field pansy	0.034	1.5	
Hairy bittercress	0.034	1.5	
Hard fescue	0.068	3.0	
Henbit	0.034	1.5	
Japanese honeysuckle	0.034	1.5	
Kyllinga, cockscomb	0.034 to 0.051	1.5 to 2.25	
Kyllinga, false-green	0.034 to 0.051	1.5 to 2.25	
Kyllinga, fragrant	0.034 to 0.051	1.5 to 2.25	
Kyllinga, green	0.034 to 0.051	1.5 to 2.25	

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Weed Species Controlled	Product Application Rate Ounces per 1,000 sq. ft.	Product Application Rate Ounces per acre	Spray Volume Gallons per acre
Large hop clover	0.034	1.5	20 to 174 gal/Acre or 0.46 to 4 gal/ 1000 sq. ft.
Lawn burweed	0.034	1.5	
Mouse-ear chickweed	0.034	1.5	
Narrow-leaf blue-eyed grass	0.034	1.5	
Nutsedge, purple*	0.068	3.0	
Nutsedge, yellow**	0.034 to 0.068	1.5 to 3.0	
Parsely-piert	0.034	1.5	
Purple deadnettle	0.068	3.0	
Quackgrass	0.034	1.5	
Rattail fescue	0.034 to 0.068	1.5 to 3.0	
Rice flatsedge*	0.068	3.0	
Ryegrass, Italian (annual)	0.034	1.5	
Ryegrass, perennial (clumpy & volunteer)	0.034 to 0.068	1.5 to 3.0	
Ryegrass, perennial (transition)	0.011 to 0.034	0.5 to 1.5	
Sedge, cylindric*	0.068	3.0	
Sedge, annual	0.034 to 0.068	1.5 to 3.0	
Sedge, globe	0.034 to 0.068	1.5 to 3.0	
Sicklepod	0.034	1.5	
Slender aster	0.034 to 0.068	1.5 to 3.0	
Southwest bedstraw	0.034	1.5	
Sowthistle	0.034 to 0.068	1.5 to 3.0	
Spotted spurge (partial control)	0.068	3.0	
Sticky chickweed	0.034	1.5	
Swinegrass	0.034	1.5	
Tall fescue	0.034	1.5	
Wandering cudweed	0.068	3.0	
White clover	0.034 to 0.068	1.5 to 3.0	
Wild Violet	0.034	1.5	
Yellow rocket	0.034 to 0.068	1.5 to 3.0	
Yellow woodsorrel	0.068	3.0	

Partial control means good activity, but not always at a level considered commercially acceptable.

*Repeat applications at 4 week intervals (up to 3 applications per season) are necessary for new growth and consistent long-term control.

**Repeat applications at 4 week intervals (up to 3 applications per season) may be necessary for new growth and consistent long-term control.

Adjuvant Use Requirements

The use of a non-ionic surfactant at 0.25 percent by volume (1 qt/100 gal) provides maximum performance.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, fold and roll back bags, clamp and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. To confine spill: Cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

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: Nonrefillable container. DO NOT reuse or refill this container. Triple rinse container (or equivalent) 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 1/4 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. Then offer for recycling if available or 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.

WARRANTY AND LIMITATION OF DAMAGES

Seller warrants to those persons lawfully acquiring title to this product that at the time of first sale of this product by Seller that this product conformed to its chemical description and was reasonably fit for the purposes stated on the label when used in accordance with Seller's directions under normal conditions of use, and Buyers and users of this product assume the risk of any use contrary to such directions. TO THE FULLEST EXTENT PERMITTED BY LAW, EXCEPT AS PROVIDED ELSEWHERE IN WRITING CONTAINING AN EXPRESS REFERENCE TO THIS WARRANTY AND LIMITATION OF DAMAGES, SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OR GUARANTY, INCLUDING ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY, AND NO AGENT OF SELLER IS AUTHORIZED TO DO SO. To the fullest extent permitted by law, in no event shall Seller's liability for any breach of warranty or guaranty exceed the purchase price of the product as to which a claim is made. To the fullest extent permitted by law, buyers and users of this product are responsible for all loss or damage from use or handling of this product which results from conditions beyond the control of Seller, including, but not limited to, incompatibility with other products unless otherwise expressly provided in Directions for Use of this product, weather conditions, cultural practices, moisture conditions or other environmental conditions outside of the ranges that are generally recognized as being conducive to good agricultural and/or horticultural practices.

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Gordon's®, ProForm®, Speedzone® and Trimec® are registered trademarks of PBI/Gordon Corporation.

Sencor® is a registered trademark of Bayer CropScience.

Drive® is a registered trademark of BASF Corporation.

Primo MAXX® is a registered trademark of Syngenta Group Company.

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EPA REG. NO. 71512-12-2217



DISTRIBUTED BY
PBI/GORDON CORPORATION
1217 WEST 12TH STREET
KANSAS CITY, MISSOURI 64101
www.pbigordon.com

Material Safety Data Sheet

Product Name: KATANA Turf Herbicide

MSDS No.: 551-6

Version No.: 001

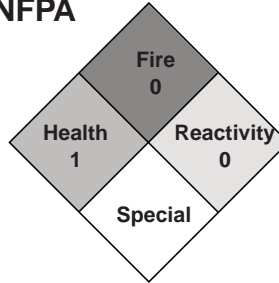
EPA Registration No.: 71512-12-2217

1. Basic Information:

Manufacturer: PBI/Gordon Corporation
Address: 1217 West 12th Street
City, State, Zip: Kansas City, MO 64101-1407
Information Contact: Environmental, Health & Safety Dept.
Information Telephone Number: (816) 421-4070
Emergency Contact: Chemtrec
Emergency Telephone Number: (800) 424-9300
Last Update: 9/25/2009

Chemical State: Liquid Gas Solid
Chemical Type: Pure Mixture

NFPA



1	Health
0	Flammability
0	Reactivity
B	Pers. Protection

2. Ingredients:

Trade Secret

CAS No.	Chemical Name	% Range	EHS	NTP	IARC	SUB Z	SARA 313	OSHA PEL	ACGIH TLV	Other Limits
104040780	Flazasulfuron	25%	N	N	N	N	N	NI	NI	NI

3. Hazardous Identification:

Hazard Category:
 Acute Chronic Fire Pressure Reactive

Hazardous Identification Information:

Brown Granule

EYE: Irritant

6. Accidental Release Measures:

Steps to be Taken in Case Material is Released or Spilled:

Spill or Release: Contain spill. Wear long sleeved shirts, trousers, rubber gloves and boots, goggles and protective mask. If on impervious surface, collect the product with a shovel and place in an adequately identified drum or other vessel. Remove to the area for chemical disposal. Wash the place with plenty of water, avoiding run-off to bodies of water. If on soil, collect the material according to the above description and also contaminated layer of soil. If in bodies of water, immediately discontinue human and animal consumption and contact local competent authorities.

4. First Aid Measures:

Route(s) of Entry:

Contact, inhalation, ingestion.

Health Hazards (Acute and Chronic):

Potential Acute Health Effects:

Eye Contact: Slightly hazardous in case of eye contact. (irritant)

Ingestion: Low oral toxicity.

Inhalation: Unlikely to cause harmful effects under normal conditions of handling and use.

Skin Contact: Not a skin irritant. Skin Absorption: Not readily absorbed through intact skin.

Signs and Symptoms:

NI

Medical Conditions Generally Aggravated by Exposure:

NI

Emergency First Aid Procedure:

Eye Contact: Hold eye open and rinse slowly and gently with water for 15-20 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.

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

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

Ingestion: Call a poison control center or doctor for treatment 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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

7. Handling and Storage:

Precautions to be Taken:

Precautions: Avoid contact with skin and eyes. When using do not eat, drink or smoke. When opening the container, avoid spills.

Storage: Store in original container that is tightly closed. Store in a shaded, dry place that is away from food, fertilizer, other pesticides and animal feed. Keep locked up and out of reach of children.

Other Precautions:

NI

8. Exposure Controls/Personal Protection:

Ventilation Requirements:

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protective Equipment:

Personal Protection: Wear goggles or face guard, dust mask and gloves.

Other Clothing and Equipment: Protective clothing consisting of a long sleeved shirt, long pants and boots should be worn when handling this product. The clothing should be changed at least daily. Persons routinely exposed to this product should shower after completing work each day. Contaminated clothing should be removed and washed thoroughly before re-use. Wash separately from other clothing.

Exposure Limits Not established.

Worker Protection Standard Does not apply.

9. Physical and Chemical Properties:

Boiling Point: NI

Melting Point: NI

Evaporation Rate (Butyl Acetate = 1): NI

Vapor Pressure (mm Hg.): NI

Vapor Density (Air = 1): NI

Solubility in Water: 2100 ppm @ pH7 for technical

Appearance and Odor: Brown Granules; Cinnamon-like odor.

Other Information:

pH: 5.0 - 6.0

Density: 49.3 pounds/cubic foot

Melting Point for Technical: 302°F

5. Fire Fighting Measures:

Flash Point: NI

F.P. Method:

Lower Explosive Limit: NI

Upper Explosive Limit: NI

Fire Extinguishing Media:

Small Fire: Foam, CO₂, or dry chemical.

Large Fire: Polar resistant foam or water fog. Avoid use of water jet.

Special Fire Fighting Procedures:

None

Unusual Fire and Explosion:

Runoff from fire control may pollute surface water; call local authorities if pollution occurs.

10. Stability and Reactivity:

Stability:

Stable.

Incompatibility (Materials to Avoid):

None known.

Decomposition/By-Products:

May decompose under fire conditions emitting toxic and irritating vapors.

Hazardous Polymerization:

Will not occur.

11. Toxicological Information:

Toxicity to Animals:

- Acute oral toxicity (LD50): 4694 mg/kg [Rat-male]
- Acute oral toxicity (LD50): 4908 mg/kg [Rat-female]
- Acute dermal toxicity (LD50): >2000 mg/kg [Rat]
- Acute inhalation toxicity (LC50): 6.17 mg/L, 4 hour(s) [Rat]
- Primary eye irritation: Eye irritant. Non-corrosive. No corneal or iridal effects.
- Primary dermal irritation: Nonirritant.

Long term studies demonstrate that flazasulfuron is not an animal carcinogen. Mutagenicity studies demonstrate that flazasulfuron is not genotoxic.

12. Ecological Information:

Environmental Hazards: Degrades in soil by both microbial and chemical degradation. Microbial degradation is affected by soil temperature and chemical degradation is affected by soil pH. Can be very phytotoxic to non-target plants. Do not apply under conditions that would favor off-site movement (drift) of spray.

13. Disposal Considerations:

Waste Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, pesticide spray or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA regional office for guidance.

Container Disposal: After all product has been removed from the packaging, triple rinse the container and clean the outer surface! Add the washings to the spray tank. Dispose of the cleaned container in a sanitary landfill. The landfill site must be away from houses, plants, any water resource, or human and animal habitats. The site must not be subjected to flooding.

14. Transport Information:

The following guidelines apply for domestic ground transport. If shipping by air or ocean, please contact our Transportation Dept.

Freight Class: Plant Growth Regulators - NMFC #101685

In our current available sizes, this product does not qualify as a Hazardous Material.

15. Regulatory Information:

OSHA STATUS: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS: This product is exempt from TSCA Regulation under FIFRA Section 3(2)(B)(ii) when used as a pesticide.

CERCLA REPORTABLE QUANTITY: None

SARA TITLE III:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: None

SECTION 311/312 HAZARD CATEGORIES: Immediate Health Hazard

SECTION 313 TOXIC CHEMICALS: None

RCRA STATUS: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

16. Other Information:

REASON FOR ISSUE: New MSDS in the ANSI Z400.1-1998 format

NOTE: NI means not indicated.

The information and statements in this Material Safety Data Sheet are believed to accurately reflect the scientific evidence used in making the hazard determination, but is not to be construed as a warranty or representation for which we assume legal responsibility. Additional information may be necessary or desirable depending on particular, exceptional or variable conditions or circumstances of use or storage or because of locally applicable laws or government regulations. Therefore, you should use this information only as a supplement to other information available to you and must make independent determinations of the suitability of the information for your particular circumstances or conditions and of the completeness of the information available from all sources to assure both the proper use of the material described herein and the safety and health of employees.

SLICE WEEDS FAST

*“Excellent for
Kyllinga Control”*

Katana® Turf Herbicide
Speed and precision – that is what the ancient Samurai expected from their katana swords. Katana cuts through a broad range of weeds including perennial/annual grasses, kyllingas, sedges and broadleaf weeds - even in cooler temperatures.

For use on:
 Bermudagrass, Zoysiagrass, Centipedegrass;
 and for use on commercial turf and sports turf.

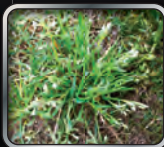
It's Sharp! It's Fast! It's Katana!



KYLLINGAS



SEDGES - ANNUAL



PDA ANNUAL



CLUMPY RYEGRASS



TALL FESCUE



BROADLEAF WEEDS



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