

100-1091

6/13/2008

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

JUN 13 2008

Mr. Pat Dinnen  
Label Group Leader  
Regulatory Affairs  
Syngenta Crop Protection Inc.  
P.O. Box 18300  
Greensboro, NC 27419


RE: Notification to request an Alternate Brand Name: Knockout™  
EPA Reg. No.: 100-1091  
Date of Submission: May 16, 2008

Dear Mr. Dinnen:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated May 16, 2008, for the product Reward Landscape and Aquatic® Herbicide. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the actions requested fall within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions, please call me directly at 703-305-6249 or Joyce Edwards of my staff at 703-308-5479.

Sincerely,

  
Linda Arrington  
Notifications & Minor Formulations Team Leader  
Registration Division (7505P)  
Office of Pesticide Programs

20825



United States  
**Environmental Protection Agency**  
 Washington, DC 20460

Register  
 Amendment  
 Other

OPP Identifier Number

**NOTIFICATION**

**Application for Pesticide - Section I**

1. Company/Product Number 100-1091	2. EPA Product Manager Mr. Erik Kraft	3. Proposed Classification  <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Reward Landscape and Aquatic Herbicide (alternate brand name Knockout)	PM# 23	
5. Name and Address of Applicant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419  <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name _____	

**Section - II**

**NOTIFICATION**

**JUN 13 2008**

Amendment - Explain below.  Final printed labels in response to Agency letter dated \_\_\_\_\_  
 Resubmission in response to Agency letter dated \_\_\_\_\_  "Me Too" Application.  
 Notification - Explain below.  Other - Explain below.

**Explanation:** Use additional page(s) if necessary. (For Section I and Section II.)  
 This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Syngenta Crop Protection, Inc. is submitting Notification of an alternate brand name for Reward Landscape and Aquatic Herbicide, EPA Reg. No. 100-1091. The proposed alternate brand name is Knockout™. Two copies of the label are attached. One copy shows the Reward Landscape and Aquatic name struck out and replaced with Knockout and the other copy is an unmarked version with the proposed alternate brand name highlighted.

**Section - III**

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____		
*Certification must be submitted		If "Yes" Unit Packaging wgt. No. per Container	If "Yes" Unit Packaging wgt. No. per container		
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 1, 2.5, 120 gallons		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input checked="" type="checkbox"/> Other Pressure Sensitive <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled					

**Section - IV**

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)					
Name Pat Dinnen		Title Label Group Leader, Regulatory Affairs		Telephone No. (Include Area Code) 336-632-2494	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.					6. Date Application Received (Stamped)
2. Signature <i>Pat Dinnen</i>		3. Title Label Group Leader, Regulatory Affairs			
4. Typed Name Pat Dinnen		5. Date May 16, 2008			

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Syngenta Crop Protection, LLC  
P.O. Box 18300  
Greensboro, NC 27419-8300  
www.syngenta.com



FedEx

May 16, 2008

Document Processing Desk (NOTIF)  
Office of Pesticide Programs (7504P)  
U.S. Environmental Protection Agency  
Room S-4900, One Potomac Yard  
2777 South Crystal Drive  
Arlington, VA 22202-4501

Attention: Ms. Linda Arrington

**SUBJECT: REWARD LANDSCAPE AND AQUATIC® HERBICIDE  
EPA REG. NO. 100-1091  
NOTIFICATION TO REQUEST AN ALTERNATE BRAND NAME**

Syngenta Crop Protection, Inc. is submitting Notification of an alternate brand name for Reward Landscape and Aquatic Herbicide, EPA Reg. No. 100-1091. The proposed alternate brand name is Knockout™. Two copies of the label are attached. One copy shows the Reward Landscape and Aquatic name struck out and replaced with Knockout and the other copy is an unmarked version with the proposed alternate brand name highlighted.

To complete this notification, EPA Form 8570-1 is enclosed. Thank you in advance for approving this request. If you have any questions, please contact me at 336-632-2494.

Sincerely,

Pat Dinnen  
Label Group Leader  
Regulatory Affairs

cc: Monty Dixon  
Fred Pearson

Enclosures

4 of 25

NOTIFICATION

JUN 13 2008

**Knockout™**

**TO PREVENT ACCIDENTAL POISONING, NEVER PUT INTO FOOD, DRINK, OR OTHER CONTAINERS, AND USE STRICTLY IN ACCORDANCE WITH ENTIRE LABEL.**

**DO NOT USE THIS PRODUCT FOR REFORMULATION.**

Active ingredient:

Diquat dibromide [6,7-dihydrodipyrido (1,2-a:2',1'-c) pyrazinediium dibromide].....	37.3%
Other Ingredients:	62.7%
<hr/> Total:	<hr/> 100.0%

Contains 2 lbs. diquat cation per gal. (3.73 lbs. diquat dibromide per gal.)

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See additional precautionary statements on label.

EPA Reg. No. 100-1091

EPA Est. 100-LA-001

Product of United Kingdom  
Formulated in the USA

1 gallon  
Net Contents

2.5 gallons  
Net Contents

120 gallons  
Net Contents

<b>FIRST AID</b>	
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>NOTE TO PHYSICIANS</b>	
<p>To be effective, treatment for diquat poisoning must begin <b>IMMEDIATELY</b>. Treatment consists of binding diquat in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from the blood by charcoal hemoperfusion or continuous hemodialysis.</p>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
<b>HOTLINE NUMBER</b>	
<p>For 24-Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call <b>1-800-888-8372</b></p>	

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION**

Harmful if inhaled. Harmful if swallowed. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with eyes or clothing.

**Personal Protective Equipment (PPE)**

Some materials that are chemical-resistant to this product are: barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils. If you want more options, follow the instructions for Category A on an EPA Chemical Resistance Category Selection Chart.

**Mixers, Loaders, Applicators and other handlers must wear:**

- Coveralls over short-sleeved shirt and short pants or coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading
- Face shield when mixing or loading

**Exception:** After this product has been diluted to 0.50% **Knockout** or less in water (i.e., the labeled rate for some spot applications), applicators for AQUATIC SURFACE APPLICATIONS must, at a minimum, wear (Note - Mixers and Loaders for this application method must still wear the personal protective equipment (PPE) as described in the above section):

- Long-sleeved shirt and long pants
- Shoes plus socks
- Waterproof gloves
- Protective eyewear

**Exception:** At a minimum, applicators for AQUATIC SUBSURFACE APPLICATIONS must wear (Note - Mixers and Loaders for this application method must still wear the personal protective equipment (PPE) as described in the above section):

- Short-sleeved shirt and short pants
- Waterproof gloves
- Chemical-resistant footwear plus socks

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.

### Engineering Control Statements

Mixers and loaders supporting aerial applications are required to use closed systems that provide dermal protection. The closed system must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)]. When using the closed system, mixers and loaders' PPE requirements may be reduced or modified as specified in the WPS.

When handlers use closed systems, enclosed cabs, or aircraft 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. Prolonged contact of the product with the skin may produce burns.
- 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

This pesticide is toxic to aquatic invertebrates. **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 wash water. **For Aquatic Uses** do not apply directly to water except as specified on this label.

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**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. To the extent permitted by applicable law, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.



## DIRECTIONS FOR USE

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

**READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

**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.

### 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 24 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 over short-sleeved shirt and short pants, or coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

**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.

**Keep all unprotected persons out of operating areas or vicinity where there may be drift.**

**For terrestrial uses**, do not enter or allow entry of maintenance workers into treated areas, or allow contact with treated vegetation wet with spray, dew, or rain, without appropriate protective clothing until spray has dried.

**For aquatic uses**, do not enter treated areas while treatments are in progress.

**For Bulk And Mini-Bulk Containers**

When the container is empty, replace the cap and seal all openings that have been opened during use and return the container to the point of purchase, or to a designated location named at the time of purchase of this product. This container must be refilled with this pesticide product. **DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE.** Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, contact Syngenta Crop Protection at 1-800-888-8372. If not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of this container must be in compliance with state and local regulations.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**

**SPECIFIC USE DIRECTIONS**

Knockout is a nonvolatile herbicidal chemical for use as a general herbicide to control weeds in commercial greenhouses and nurseries; ornamental seed crops (flowers, bulbs, etc. – except in the state of California); landscape, industrial, recreational, commercial, residential, and public areas; turf renovation (all turf areas except commercial sod farms); dormant established turfgrass (bermudagrass, zoysiagrass – nonfood or feed crop); and aquatic areas. Absorption and herbicidal action is usually quite rapid with effects visible in a few days. Knockout controls weeds by interfering with

photosynthesis within green plant tissue. Weed plants should be succulent and actively growing for best results. Rinse all spray equipment thoroughly with water after use. Avoid spray drift to crops, ornamentals, and other desirable plants during application, as injury may result. Application to muddy water may result in reduced control. Minimize creating muddy water during application. Use of dirty or muddy water for Knockout dilution may result in reduced herbicidal activity. Avoid applying under conditions of high wind, water flow, or wave action.

## SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator and the grower. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses, or to applications using dry formulations.

- The distance of the outermost nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they should be observed.

### Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See **Wind, Temperature and Humidity, and Temperature inversions**).

### Controlling Droplet Size

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended

practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

- **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. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

### **Boom Length**

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

### **Application Height**

Applications should not be made at a height greater than 10 ft. above the top of the target plants, unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

### **Swath Adjustment**

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

### **Wind**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

### **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog, however, if fog is not present inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**Sensitive Areas**

The pesticide should only be applied when the wind is blowing away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops).

**COMMERCIAL GREENHOUSES AND NURSERIES**

For general weed control in commercial greenhouses (beneath benches), field grown and container stock, and other similar areas, **Knockout** may be applied preplant or postplant preemergence in field grown ornamental nursery plantings or postemergence as a directed spray. **Knockout** may also be applied preemergence in ornamental seed crops (except in the state of California). Avoid contact with desirable foliage as injury may occur. Do not use on food or feed crops.

**Spot spray:** 1-2 qts. **Knockout** plus the labeled rate of a 75% or greater nonionic surfactant per 100 gals. of water, or 0.75 oz. (22 mls.) **Knockout** plus the labeled rate of a 75% or greater nonionic surfactant per 1 gal. of water.

**Broadcast:** 1-2 pts. **Knockout** in a minimum of 15 gals. of water per acre. Add the labeled rate of a 75% or greater nonionic surfactant per 100 gals. of spray mixture. Use an adequate spray volume to insure good coverage.

**ORNAMENTAL SEED CROPS (FLOWERS, BULBS, ETC.) EXCEPT IN THE STATE OF CALIFORNIA**

For preharvest desiccation of ornamental seed crops. NOT FOR FOOD OR FIBER CROPS.

**Broadcast (Air or Ground):** 1.5-2 pts. **Knockout** plus the labeled rate of a 75% or greater nonionic surfactant per acre in sufficient water (minimum of 5 gals. by air; 15 gals. by ground) for desiccation and weed burndown. Repeat as needed at no less than 5-day intervals up to three applications. Do not use seed, screenings, or waste as feed or for consumption.

**DIRECTIONS FOR LANDSCAPE, INDUSTRIAL, RECREATIONAL, COMMERCIAL, RESIDENTIAL, AND PUBLIC AREAS**

**Knockout** provides fast control of broadleaf and grassy weeds in industrial, recreational, golf course, commercial, residential, and public areas.

**Knockout** is a nonselective herbicide that rapidly kills undesirable above ground weed growth in 24-36 hours. Avoid application of **Knockout** to desirable plants.

**Knockout** is a contact/desiccant herbicide; it is essential to obtain complete coverage of the target weeds to get good control. Improper application technique and/or application to stressed weeds may result in unacceptable weed control. For best results, apply to actively growing, young weeds.

Difficult weeds (such as perennial or deeply-rooted weeds) can often be controlled by tank mixing **Knockout** with other systemic-type herbicides. Refer to other product labels for specific application directions.

For residual weed control, tank mix **Knockout** with a preemergent herbicide labeled for the intended use site. When mixing **Knockout** with another herbicide, it is recommended to mix just a small amount first to determine if the mixture is physically compatible before proceeding with larger volumes.

Syngenta has not tested all possible tank mixtures with other herbicides for compatibility, efficacy or other adverse effects. Before mixing with other herbicides Syngenta recommends you first consult your state experimental station, state university or extension agent.

**Grounds maintenance weed control:** **Knockout** can be used as a spot or broadcast spray to control weeds in public, commercial and residential landscapes, including landscape beds, lawns, golf courses and roadsides. **Knockout** can also be used for weed control around the edges and nonflooded portions of ponds, lakes and ditches.

**Trim and Edge weed control:** **Knockout** can be used to eliminate undesired grass and broadleaf plant growth in a narrow band along driveways, walkways, patios, cart paths, fence lines, and around trees, ornamental gardens, buildings, other structures, and beneath noncommercial greenhouse benches. Vegetation control with **Knockout** is limited to the spray application width. Do not exceed the labeled rate of **Knockout** as excessive rates may result in staining of concrete-based materials.

**Knockout**, since it does not translocate systemically, can be used as an edging or pruning tool when precisely applied to select areas of grass or to undesirable growth on desirable ornamental bedding plants, ground covers, etc.

**Industrial weed control:** **Knockout** can be used as a spot or broadcast spray either alone or in combination with other herbicides as a fast burndown or control weeds in rights-of-ways, railroad beds/yards, highways, roads, dividers and medians, parking lots, pipelines, pumping stations, public utility lines, transformer stations and substations, electric utilities, storage yards, and other non-crop areas.

**Spot spray:** Apply either 1-2 qts. of **Knockout** plus the labeled rate of a 75% or greater nonionic surfactant per 100 gals. water, or 0.75 oz. (22 mls.) **Knockout** plus the labeled rate of a 75% or greater nonionic surfactant per 1 gal. of water.

**Broadcast:** 1-2 pts. **Knockout** per acre in sufficient water to insure good spray coverage. Add the labeled rate of 75% or greater nonionic surfactant per 100 gals. spray mixture. Greater water volumes are necessary if the target plants are tall and/or dense. It is recommended that 60 gals. or greater water volume be used to obtain good coverage of dense weeds.

**TURF RENOVATION (ALL TURF AREAS EXCEPT COMMERCIAL SOD FARMS)**

To desiccate golf course turf and other turf areas prior to renovation, apply 1-2 pts. of **Knockout** per acre plus the labeled rate of a 75% or greater nonionic surfactant in 20-100 gals. of water (4 teaspoons of **Knockout** plus the labeled rate of a 75% or greater nonionic surfactant per 1 gal. of water) using ground spray equipment. Apply for full coverage and thorough contact with the turfgrass. Apply only when the turf is dry, free from dew and incidental moisture. For enhanced turf desiccation, especially in the case of thick turfgrass, water volumes should approach 100 gals. of water per acre.

For **suppression** of regrowth and quick desiccation of treated turfgrass, **Knockout** may be mixed with other systemic nonselective or systemic postemergence grassy weed herbicides. Refer to other product labels for specific application directions and restrictions.

Avoid spray contact with, or spray drift to, foliage of ornamental plants or food crops.

Do not graze livestock on treated turf or feed treated thatch to livestock.

**DORMANT ESTABLISHED TURFGRASS (BERMUDAGRASS, ZOYSIAGRASS), NONFOOD OR FEED CROP**

For control of emerged annual broadleaf and grass weeds, including Little Barley\*, Annual Bluegrass, Bromes including Rescuegrass, Sixweeks fescue, Henbit, Buttercup, and Carolina Geranium in established dormant bermudagrass lawns, parks, golf courses, etc.

Apply 1-2 pts. **Knockout** per acre in 20-100 gals. of spray mix by ground as a broadcast application. Add the labeled rate of a 75% or greater nonionic surfactant per 100 gals. of spray mixture.

Bermudagrass must be dormant at application. Application to actively growing bermudagrass may cause delay or permanent injury. Users in the extreme Southern areas should be attentive to the extent of dormancy at the time of application.

\*For control of Little Barley, apply **Knockout** prior to the mid-boot stage.

**AQUATIC USE DIRECTIONS**

**New York – Not for Sale or Use in New York State without Supplemental Special Local Needs Labeling.**

Necessary approval and/or permits must be obtained prior to application if required. Consult the responsible State Agencies (i.e., Fish and Game Agencies, State Water Conservation authorities, or Department of Natural Resources).

Treatment of dense weed areas may result in oxygen loss from decomposition of dead weeds. This loss of oxygen may cause fish suffocation. Therefore, treat only 1/3 to 1/2 of the water body area at one time and wait 14 days between treatments.

For best results on submersed weeds, **Knockout** should be applied to actively growing (photosynthesizing) weeds when water temperatures have reached or exceeded approximately 50°F, typically during the Spring or early Summer.

For application only to **still water** (i.e. ponds, lakes, and drainage ditches) where there is minimal or no outflow to public waters.

and/or

For applications to **public waters** in ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds. For use by:

- Corps of Engineers; or
- Federal or State Public Agencies (i.e., Water Management District personnel, municipal officials); or
- Applicators and/or Licensees (Certified for aquatic pest control) that are authorized by the State or Local government.

Treated water may be used according to the following table or until such time as an approved assay (example: PAM II Spectromatic Method) shows that the water does not contain more than the designated maximum contaminant level goal (MCLG) of 0.02 mg/l. (ppm) of diquat dibromide (calculated as the cation).



**Water Use Restrictions Following Applications With Knockout (Days)**

Application Rate	Drinking	Fishing and Swimming	Livestock/Domestic Animals Consumption	Spray Tank Applications** and Irrigation to Turf and Landscape Ornamentals	Spray Tank Applications** and Irrigation to Food Crops and Production Ornamentals
2 gals./surface acre	3 days	0	1 day	3 days	5 days
1 gal./surface acre	2 days	0	1 day	2 days	5 days
0.75 gal./surface acre	2 days	0	1 day	2 days	5 days
0.50 gal./surface acre	1 day	0	1 day	1 day	5 days
<b>Spot Spray*</b> ( $<0.5$ gal./surface acre)	1 day	0	1 day	1 day	5 days

\*Add a nonionic surfactant (with at least 75% of the constituents active as a spray adjuvant) at the rate recommended by the manufacturer.

\*\*For preparing agricultural sprays for food crops, turf or ornamentals (to prevent phytotoxicity), do not use water treated with Knockout before the specified time period.

When the contents of more than one spray tank is necessary to complete a single aquatic application, no water holding restrictions apply between the consecutive spray tanks.

No applications are to be made in areas where commercial processing of fish, resulting in the production of fish protein concentrate or fish meal, is practiced. Before application, coordination and approval of local and/or State authorities must be obtained.

**Floating and Marginal Weeds Including:**

- Water lettuce, *Pistia stratiotes*
- Water hyacinth, *Eichhornia crassipes*
- Duckweed, *Lemna* spp.
- Salvinia spp. (including *S. molesta*)
- Pennywort (*Hydrocotyle* spp.)
- Frog's Bit<sup>1</sup>, *Limnobium spongia*
- Cattails, *Typha* spp.

<sup>1</sup>Not for use in California

**Knockout** may be applied by backpack, airboat, spray handgun, helicopter, airplane, or similar application equipment that results in thorough spray coverage.

**Spot Treatment:** Apply **Knockout** at 2 quarts per 100 gallons spray carrier (0.5% solution) with an approved aquatic wetting agent at 0.25-1.0% v/v (1 quart to 1 gallon per 100 gallons water). For cattail control, **Knockout** should be applied prior to flowering at the maximum application rate (8 quarts of **Knockout**/100 gallons spray carrier) plus the wetting agent. Repeat treatments may be necessary for complete control.

Spray to completely wet target weeds but not to runoff. Densely packed weeds or mats may require additional applications due to incomplete spray coverage. Re-treat as needed. For best results, re-treat weed escapes within 2 weeks of the initial treatment.

**Broadcast Treatment:** Apply **Knockout** at the rate of 0.5-2.0 gallons per surface acre in sufficient carrier along with 16-32 oz./A of an approved wetting agent. Re-treat as necessary for densely populated weed areas. Good coverage is necessary for control of the target weeds.

For duckweed control, apply **Knockout** at 1-2 gallons/A.

#### **Submersed Weeds Including:**

Bladderwort, *Utricularia* spp.

Hydrilla, *Hydrilla verticillata*

Watermilfoils (including Eurasian), *Myriophyllum* spp.

Pondweeds<sup>1</sup>, *Potamogeton* spp.

Coontail, *Ceratophyllum demersum*

Elodea, *Elodea* spp.

Brazilian Elodea, *Egeria densa*

Naiad, *Najas* spp.

Algae<sup>2</sup>, *Spirogyra* spp. and *Pithophora* spp.

<sup>1</sup>**Knockout** controls *Potamogeton* species except Richardson's pondweed, *P. richardsonii*.

<sup>2</sup>Suppression only. For control of *Spirogyra* and/or *Pithophora*, use **Knockout** in a tank mix with an approved algaecide.

For severe weed or algae infestations, the use of an approved algaecide either as a pretreatment to the **Knockout** application or in a tank mix, may result in enhanced weed control.

To control submersed weeds, apply **Knockout** in water at 0.5-2.0 gallons per surface acre (per 4 foot water depth). For severe weed infestations, use the 2.0 gallon per surface acre rate. For best results, re-treat as necessary on 14-21 day intervals. The

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table below shows how many gallons of Knockout to apply per surface acre based on water depth.

	Gallons of <u>Knockout</u> per Surface Acre			
	Average Water Depth			
	1 Foot	2 Feet	3 Feet	4 Feet
1 gallon/acre rate	0.25 gal.	0.50 gal.	0.75 gal.	1.0 gal.
2 gallon/acre rate	0.50 gal.	1.0 gal	1.5 gals.	2.0 gals.

**Note:** For water depths of 2 feet or less including shorelines, do not exceed 1 gallon per surface acre.

**Subsurface Applications:** Where the submersed weed growth, especially Hydrilla, has reached the water surface, apply either in a water carrier or an invert emulsion through boom trailing hoses carrying nozzle tips to apply the dilute spray below the water surface to insure adequate coverage.

**Bottom Placement:** Where submersed weeds such as Hydrilla, Bladderwort, or Coontail have reached the water surface and/or where the water is slowly moving through the weed growth, the use of an invert emulsion carrier injecting diluted Knockout near the bottom with weighted hoses may improve control. The addition of a copper based algaecide may improve control. If algae are present along with the submersed weeds, a pretreatment with a copper based algaecide may improve overall control.

**Surface Application for Submerged Aquatic Weeds:** Apply the recommended rate of Knockout as a spray in sufficient carrier to fully cover the target area. Applications should be made to ensure complete coverage of the weed areas. In mixed weed populations, use the high rate of application as indicated by weeds present. For dense submersed weeds or water over 2 feet deep, a surface spray is not recommended (Knockout should be applied subsurface in these situations.)

**If posting is required by your state or tribe – consult the agency responsible for pesticide regulations for specific details.**

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**STORAGE AND DISPOSAL**

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

**Pesticide Storage**

Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Do not contaminate feed, foodstuffs, or drinking water. Do not store or transport near feed or food. Store at temperatures above 32°F. For help with any spill, leak, fire, or exposure involving this material, call **1-800-888-8372**.

**Pesticide Disposal**

Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, 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**

Do not reuse container. 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.

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For non-emergency (e.g., current product information), call Syngenta Crop Protection at 1-800-334-9481.
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Manufactured for:  
Syngenta Crop Protection, Inc.  
P. O. Box 18300  
Greensboro, North Carolina 27419-8300  
[www.syngenta-us.com](http://www.syngenta-us.com)

2/08/25

CONTAINER LABEL



TO PREVENT ACCIDENTAL POISONING, NEVER PUT INTO FOOD, DRINK, OR OTHER CONTAINERS, AND USE STRICTLY IN ACCORDANCE WITH ENTIRE LABEL.

DO NOT USE THIS PRODUCT FOR REFORMULATION.

Active ingredient:

Diquat dibromide [6,7-dihydrodipyrido (1,2-a:2',1'-c) pyrazinediium dibromide]..... 37.3%

Other Ingredients:..... 62.7%

Total:..... 100.0%

Contains 2 lbs. diquat cation per gal. (3.73 lbs. diquat dibromide per gal.)

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements on label.

**AGRICULTURAL USE REQUIREMENTS**  
Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

1 gallon  
Net Contents

2.5 gallons  
Net Contents

120 gallons  
Net Contents

<b>FIRST AID</b>	
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>NOTE TO PHYSICIANS</b>	
<p>To be effective, treatment for diquat poisoning must begin <b>IMMEDIATELY</b>. Treatment consists of binding diquat in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from the blood by charcoal hemoperfusion or continuous hemodialysis.</p>	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
<b>HOTLINE NUMBER</b>	
<p>For 24-Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call <b>1-800-888-8372</b></p>	

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION**

Harmful if inhaled. Harmful if swallowed. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with eyes or clothing.

**Environmental Hazards**

This pesticide is toxic to aquatic invertebrates. **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 wash water. **For Aquatic Uses** do not apply directly to water except as specified on this label.

[Bulk Only]:

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. To the extent permitted by applicable law, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

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## **STORAGE AND DISPOSAL**

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

### **Pesticide Storage**

Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Do not contaminate feed, foodstuffs, or drinking water. Do not store or transport near feed or food. Store at temperatures above 32°F. For help with any spill, leak, fire, or exposure involving this material, call **1-800-888-8372**.

### **Pesticide Disposal**

Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, 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**

Do not reuse container. 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.



**For Bulk And Mini-Bulk Containers**

When the container is empty, replace the cap and seal all openings that have been opened during use and return the container to the point of purchase, or to a designated location named at the time of purchase of this product. This container must be refilled with this pesticide product. **DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE.** Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, contact Syngenta Crop Protection at 1-800-888-8372. If not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of this container must be in compliance with state and local regulations.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**

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EPA Est. 100-LA-001

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Formulated in the USA

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Manufactured for:  
Syngenta Crop Protection, Inc.  
P. O. Box 18300  
Greensboro, North Carolina 24719-8300  
[www.syngenta-us.com](http://www.syngenta-us.com)