UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

March 16, 2015

Rebecca Clemmer
Regulatory Manager
United Phosphorus, Inc.
630 Freedom Business Center, Suite 402
King of Prussia, PA 19406

Subject: Label Amendment – Modification of irrigation restrictions
Product Name: Aquathol K Aquatic Herbicide
Alternate Brand Name: Cascade
EPA Registration Number: 70506-176
Application Date: October 9, 2013
Decision Number: 485245

Dear Ms. Clemmer:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. “To distribute or sell” is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Sarah Meadows by phone at 703-347-0505, or via email at meadows.sarah@epa.gov.

Sincerely,

Kathryn Montague, Product Manager 23
Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

Enclosure

AQUATHOL® K

AQUATIC HERBICIDE

ACCEPTED
03/16/2015
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 70506-176

For aquatic plant control in quiescent, slow moving, and flowing water aquatic sites.

ACTIVE INGREDIENT:	
Dipotassium salt of endothall*……	40.3%
OTHER INGREDIENTS:……..	59.7%
TOTAL	100.0%

Contains 4.23 lbs. dipotassium endothall* per gallon
*7-oxabicyclo [2.2.1]heptane-2,3-dicarboxylic acid equivalent 28.6%

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

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 someone to explain it to you in detail.)

FIRST AID

IF IN EYES:
- 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.
- Call a poison control center or doctor for treatment advice.

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

IF ON SKIN OR CLOTHING:
- 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 INHALED:
- Move person to fresh air.
- If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 866-673-6671 (Rocky Mountain Poison Control Center) for emergency medical treatment information.
See inside for additional precautionary statements.
NOTE TO PHYSICIAN: Measures against circulatory shock, respiratory depression, and convulsion may be needed.

EPA Registration No. 70506-176

EPA Establishment No. 62171-MS-003

United Phosphorus, Inc.
630 Freedom Business Center, Suite 402
King of Prussia, PA 19406

Net Contents:
Batch/Lot No.: _____

PRODUCT INFORMATION

Aquathol K is a liquid concentrate soluble in water which is effective against a broad range of aquatic plants. Dosage rates indicated for the application of Aquathol K are measured in parts per million (ppm) of dipotassium endothall.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER

CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. AVOID BREATHING VAPORS OR SPRAY MIST. PROLONGED OR FREQUENTLY REPEATED SKIN CONTACT MAY CAUSE ALLERGIC REACTIONS IN SOME INDIVIDUALS.

Personal Protective Equipment (PPE)

Mixers, Loaders, Applicators and other handlers must wear:

- Long-sleeved shirt and long pants,
- Shoes and socks,
- Chemical-resistant gloves made of any waterproof material,
- Protective eyewear,
- NIOSH-approved respirator with a dust/mist filter with MSHA/NIOSH approval number prefix TC-21C or any N, R, P, or HE filter.
  Exception: During application, the respirator need not be worn, provided that the pesticide is applied in a manner (such as direct metering or subsurface application from the rear of a vessel that is moving into the wind) such that the applicator will have no contact with the pesticide.

See Engineering Controls for additional requirements.

User Safety Requirements:

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

Engineering Controls:

When mixers and loaders use a closed system designed by the manufacturer to enclose the pesticide to prevent it from contacting handlers or other people AND the system is functioning properly and is used and maintained in accordance with the manufacturers written operating instructions, the handlers need not wear a respirator, provided the required respirator is immediately available for use in an emergency such as a spill or equipment breakdown.

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

ENVIRONMENTAL HAZARDS

Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

This pesticide is toxic to mammals.

Treatment of aquatic plants can result in oxygen loss from decomposition of dead plants. This loss can cause fish suffocation. Water bodies containing very high plant density should be treated in sections to prevent suffocation of fish.

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.

- For quiescent or slow moving water treatments: Waters treated with Aquathol K may be used for swimming, fishing, and irrigating turf, ornamental plants and crops immediately after treatment.

- Do not use treated water for animal consumption within the following periods:

  0.5 ppm dipotassium salt – 7 days after application
  4.25 ppm dipotassium salt – 14 days after application
  5.0 ppm dipotassium salt – 25 days after application

- For flowing water treatments: Waters treated with Aquathol K may be used for swimming, fishing, livestock watering, and irrigating turf, ornamental plants and crops immediately after treatment.
- Phytotoxicity is not expected on plants or crops irrigated with Aquathol K treated water, however, all species and cultivars (varieties) have not been tested.
- Undiluted Aquathol K may be injurious to crops, grass, ornamentals, and other foliage.
- Do not use Aquathol K treated water for chemigation as interactions between Aquathol K and other pesticides and fertilizers are not known.
- Do not use Aquathol K in brackish or saltwater.
- Wash out spray equipment with water after each operation.
- Avoid contact of spray concentrate (product) directly or by drift with non-target plants or crops as injury may result.
- United Phosphorus, Inc. recommends not lowering Aquathol K rates below those specified within this label, when using Aquathol K in a treatment combination, or as a tank mix, with product(s) containing ALS inhibitor active ingredients, unless specified otherwise on this label or a United Phosphorus, Inc. supplemental label.

HOW TO APPLY:
Aquathol K is a contact herbicide; consequently, apply when target plants are present.

Aquathol K should be sprayed on the water or injected below the water surface. It may be applied as a concentrate or diluted with water depending on the equipment.

In instances where the plant(s) to be controlled is an exposed surface problem (i.e., some of the broad-leaved pond weeds), coverage is important. For best results, apply the concentrate with the least amount of water compatible with the application equipment.

Drinking Water (Potable Water)
Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits.
The drinking water (potable water) restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of endothall acid in the water is less than the MCL (Maximum Contamination Level) of 0.1 ppm. Applicators should consider the unique characteristics of the treated waters to assure that endothall acid concentrations in potable drinking water do not exceed 0.1 ppm at the time of consumption.

For Lakes, Ponds, and other Quiescent Water Bodies:

- For Aquathol K applications, the drinking water setback distance from functioning potable water intakes in the treated water body must be greater than or equal to 600 feet.
- Note: Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.

For Flowing Water Bodies:

- Applicator is responsible to assure that treated water exceeding the MCL of 0.1 ppm does not enter potable water intakes. For Aquathol K applications, potable water intakes must be closed when treated water exceeding the MCL of 0.1 ppm is present at the intake. In the event the water intake cannot be closed, treatments must only be made downstream from the intake in order to assure Aquathol K treated water above 0.1 ppm does not enter the potable water system.

QUIESCENT OR SLOW MOVING WATER TREATMENTS: SURFACE OR INJECTED APPLICATIONS

For aquatic plant control in quiescent or slow moving water, Aquathol K use rates can be found in the following chart. Since the active ingredient is water soluble and tends to diffuse from the treated area, select the dosage rate applicable to the area to be treated. Marginal treatments of large bodies of water require higher rates as indicated.

Use higher labeled rates of Aquathol K when making treatments to small areas with an increased potential for rapid dilution or when treating narrow areas such as boat lanes or shoreline treatments where dilution may reduce the exposure of plants to Aquathol K.

Use lower labeled rates of Aquathol K for large contiguous treatment blocks or in protected areas such as coves where reduced water movement will not result in rapid dilution of Aquathol K from the target treatment area or when treating entire lakes or ponds.

PLANTS CONTROLLED AND AQUATHOL K DOSAGE RATES FOR SURFACE OR INJECTED APPLICATION IN QUIESCENT OR SLOW-MOVING WATER

Aquatic Plant	APPLICATION RATE			
	Entire Pond/Lake or Large Area Treatment		Spot or Lake Margin Treatment	
	ppm Dipotassium Endothall	gallons Aquathol K per Acre Ft.	ppm Dipotassium Endothall	gallons Aquathol K per Acre Ft.
Coontail, *Ceratophyllum* spp.	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Horned Pondweed, *Zannichellia palustris*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Sago Pondweed, *Stuckenia pectinata*	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Hydrilla, *Hydrilla verticillata*	1.0-4.0	0.6-2.6	2.0-5.0	1.3-3.2
Hygrophila *, *Hygrophila polysperma*	4.0-5.0	2.6-3.2	5.0	3.2
Milfoil, *Myriophyllum* spp.	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Naiad, *Najas* spp.	2.0-4.0	1.3-2.6	3.0-5.0	1.9-3.2
Pondweed, *Potamogeton* spp.	0.75-3.0	0.45-1.9	1.5-5.0	1.0-3.2
Including:				
American, *P. nodosus*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Largeleaf (Bass Weed), *P. amplifolius*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Curlyleaf, *P. crispus*	0.75-1.5	0.45-1.0	1.5-5.0	1.0-3.2
Flatstem, *P. zosteriformis*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Floating-leaf, *P. natans*	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Illinois, *P. Illinoensis*	1.5-2.5	1.0-1.6	2.5-5.0	1.6-3.2
Narrowleaf, *P. pusillus*	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Threadleaf, *P. filiformis*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Variable Leaf, *P. diversifolius*	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Parrotfeather, *Myriophyllum aquaticum*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Water Stargrass, *Heteranthera spp.*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2

* Suppression only

The following charts indicate the quantity of Aquathol K to be applied.

Gallons of Aquathol K to Treat One Acre-Foot of Water

	Rate (ppm)						
	0.75	**1.0**	**1.5**	**2.0**	**3.0**	**4.0**	**5.0**
1 acre ft	**gallons/A-ft**						
	0.45	0.6	1.0	1.3	1.9	2.6	3.2

Fluid Ounces of Aquathol K to Treat 1,000 Square-Feet per Foot of Depth

	Rate (ppm)						
	0.75	**1.0**	**1.5**	**2.0**	**3.0**	**4.0**	**5.0**
1000 ft^2	**fl oz/1000 ft^2**						
	1.4	1.9	2.8	3.8	5.7	7.6	9.4

FLOWING WATER TREATMENTS (WITH THE EXCEPTION OF IRRIGATION CANALS): DRIP OR METERING SYSTEM APPLICATIONS

For aquatic plant control in flowing water, Aquathol K use rates can be found in the following chart. Apply Aquathol K in a manner to achieve the desired rate and adequate mixing so product is distributed throughout the entire water column. Adequate concentration (rate) and exposure time (length of treatment) will impact Aquathol K efficacy on the target plant species. Although Aquathol K is a contact herbicide adequate exposure time is critical. The following rate chart has been developed based on Concentration Exposure Time (CET) data for Aquathol K. The CET concept allows rates and the length of exposure to be adjusted for different treatment scenarios.

AQUATHOL K APPLICATION RATES FOR DRIP OR METERING APPLICATION SYSTEMS IN FLOWING WATER

Plant Species	Length of Treatment (hours)							
	6	8	12	18	24	36	48	72
	Rate (ppm)							
Pondweeds (*Potamogeton* spp.) Sago Pondweed (*Stuckenia pectinata*)	4.0-5.0	3.0-4.0	2.0-3.0	1.5-2.5	1.0-2.0	0.75-1.5	0.5-1.0	0.5
Milfoil (*Myriophyllum* spp.) Parrotfeather (*Myriophyllum aquaticum*) Coontail (*Ceratophyllum* spp.) Horned pondweed (*Zannichellia*) spp.) Hydrilla (*Hydrilla verticillata*) Naiad (*Najas* spp.) Water Stargrass (*Heteranthera* spp.)	5.0	4.0-5.0	3.0-4.0	2.0-3.0	1.5-2.5	1.0-2.0	0.75-1.5	0.5-1.0

NOTE: Hygrophila (*Hygrophila polysperma*) may be suppressed at the higher application rates listed in this table.

Restrictions: Do not apply more than 30 ppm per growing season, not to exceed 5 ppm per application. Do not apply more than a total of 5 ppm within a 7-day interval.

Note: There is no Pre-harvest Interval (PHI) for crops irrigated with treated water.

To calculate the amount of Aquathol K required for a particular treatment use the following formula;

[Cubic Feet per Second (CFS) X Length of Treatment (hrs) X rate (ppm)] x 0.052947 = Gallons of Aquathol K needed for treatment

To calculate the amount of Aquathol K to be applied per hour use the following formula:

Gallons of Aquathol K per hour = Total gallons of Aquathol K / Length of Treatment (hrs)

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in the original container. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. Storage at temperatures below 32°F may result in the product freezing or crystallizing. Should this occur the product must be warmed to 50°F or higher and thoroughly agitated. In the event of a spill during handling or storage, absorb with sand or other inert material and dispose of absorbent in accordance with the Pesticide Disposal Instructions listed below.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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 Handling:
(for Nonrefillable containers)
Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

For containers 5 gallons or less:
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 ¼ 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.

Or

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For containers more than 5 gallons:

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Or

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Pour or pump rinsate into application equipment or rinsate collection system. Drain for 10 seconds after the flow begins to drip.

Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(for Refillable containers)
Refillable container. Refill this container with pesticide only. Do not use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

EMERGENCY TELEPHONE NUMBERS
CHEMTREC: (800) 424-9300
MEDICAL: (866) 673-6671 Rocky Mountain Poison Control Center

IMPORTANT INFORMATION
READ BEFORE USING PRODUCT

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 reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as 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 United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, UNITED PHOSPHORUS, INC. AND SELLER MAKE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ON THIS LABEL.

To the extent consistent with applicable law, United Phosphorus, Inc. or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product and **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF UNITED PHOSPHORUS, INC. 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 UNITED PHOSPHORUS, INC. OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

United Phosphorus, Inc. and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by the duly authorized representative of United Phosphorus, Inc.

Rev. 3/13/15

CASCADE®

AQUATIC HERBICIDE

For aquatic plant control in irrigation systems and other flowing water aquatic sites and quiescent,or slow moving waters.

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Dipotassium salt of endothall*……40.3%
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- Do not induce vomiting unless told by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING:
- 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 INHALED:
- Move person to fresh air.
- If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
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HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 866-673-6671 (Rocky Mountain Poison Control Center) for emergency medical treatment information.
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- Shoes and socks,
- Chemical-resistant gloves made of any waterproof material,
- Protective eyewear,
- NIOSH-approved respirator with a dust/mist filter with MSHA/NIOSH approval number prefix TC-21C or any N, R, P, or HE filter.
  Exception: During application, the respirator need not be worn, provided that the pesticide is applied in a manner (such as direct metering or subsurface application from the rear of a vessel that is moving into the wind) such that the applicator will have no contact with the pesticide.

See Engineering Controls for additional requirements.

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

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- Do not use treated water for animal consumption within the following periods:

  0.5 ppm dipotassium salt – 7 days after application
  4.25 ppm dipotassium salt – 14 days after application
  5.0 ppm dipotassium salt – 25 days after application

- For flowing water treatments: Waters treated with Cascade may be used for swimming, fishing, livestock watering, and irrigating turf, ornamental plants and crops immediately after treatment.
- Phytotoxicity is not expected on plants or crops irrigated with Cascade treated water, however, all species and cultivars (varieties) have not been tested.
- Undiluted Cascade may be injurious to crops, grass, ornamentals or other foliage.
- Do not use Cascade treated water for chemigation as interactions between Cascade and other pesticides and fertilizers are not known.
- Do not use Cascade in brackish or saltwater.
- Wash out spray equipment with water after each operation.
- Avoid contact of spray concentrate (product) directly or by drift with non-target plants or crops as injury may result.
- United Phosphorus, Inc. recommends not lowering Cascade rates below those specified within this label, when using Cascade in a treatment combination, or as a tank mix, with copper-based product(s), unless specified otherwise on this label or a United Phosphorus,

Inc. supplemental label.

HOW TO APPLY:
Cascade is a contact herbicide; consequently, apply when target plants are present.

Cascade should be sprayed on the water or injected below the water surface. It may be applied as a concentrate or diluted with water depending on the equipment.

In instances where the plants(s) to be controlled is an exposed surface problem (i.e., some of the broad-leaved pond weeds), coverage is important. For best results, apply the concentrate with the least amount of water compatible with the application equipment.

Drinking Water (Potable Water)
Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits.
The drinking water (potable water) restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of endothall acid in the water is less than the MCL (Maximum Contamination Level) of 0.1 ppm. Applicators should consider the unique characteristics of the treated waters to assure that endothall concentrations in potable drinking water do not exceed 0.1 ppm at the time of consumption.

For Lakes, Ponds, and other Quiescent Water Bodies:

- For Cascade applications, the drinking water setback distance from functioning potable water intakes in the treated water body must be greater than or equal to 600 feet.
- Note: Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.

For Irrigation Canals and other Flowing Water Bodies:
Applicator is responsible to assure that treated water does not enter potable water intakes. For Cascade applications, potable water intakes must be closed when treated water is present at the intake. In the event the water intake cannot be closed, treatments must only be made downstream from the intake in order to assure Cascade treated water does not enter the potable water system

QUIESCENT OR SLOW MOVING WATER TREATMENTS: SURFACE OR INJECTED APPLICATIONS

For aquatic plant control in quiescent or slow moving water, Cascade use rates can be found in the following chart. Since the active ingredient is water soluble and tends to diffuse from the treated area, select the dosage rate applicable to the area to be treated. Marginal treatments of large bodies of water require higher rates as indicated.

Use higher labeled rates of Cascade when making treatments to small areas with an increased potential for rapid dilution or when treating narrow areas such as boat lanes or shoreline treatments where dilution may reduce the exposure of plants to Cascade.

Use lower labeled rates of Cascade for large contiguous treatment blocks or in protected areas such as coves where reduced water movement will not result in rapid dilution of Cascade from the target treatment area or when treating entire lakes or ponds.

PLANTS CONTROLLED AND CASCADE DOSAGE RATES FOR SURFACE OR INJECTED APPLICATIONS TO QUIESCENT OR SLOW-MOVING WATER

Aquatic Plant	APPLICATION RATE			
	Entire Pond/Lake or Large Area Treatment		Spot or Lake Margin Treatment	
	ppm Dipotassium Endothall	gallons Aquathol K per Acre Ft.	ppm Dipotassium Endothall	gallons Aquathol K per Acre Ft.
Bur Reed, *Sparganium* spp.	3.0-4.0	1.9-2.6	4.0-5.0	2.6-3.2
Coontail, *Ceratophyllum* spp.	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Horned Pondweed, *Zannichellia palustris,*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Sago Pondweed, *Stuckenia pectinata*	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Hydrilla, (*Hydrilla verticillata*	1.0-4.0	0.6-2.6	2.0-5.0	1.3-3.2
Hygrophila *, *Hygrophila polysperma*	4.0-5.0	2.6-3.2	5.0	3.2
Milfoil, *Myriophyllum* spp.	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Naiad, *Najas* spp.	2.0-4.0	1.3-2.6	3.0-5.0	1.9-3.2
Pondweed, *Potamogeton* spp.	0.75-3.0	0.45-1.9	1.5-5.0	1.0-3.2
Including:				
American, *P. nodosus*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Largeleaf (Bass Weed), *P. amplifolius*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Curlyleaf, *P. crispus*	0.75-1.5	0.45-1.0	1.5-5.0	1.0-3.2
Flatstem, *P. zosteriformis*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Floating-leaf, *P. natans*	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Illinois, *P. Illinoensis*	1.5-2.5	1.0-1.6	2.5-5.0	1.6-3.2
Narrowleaf, *P. pusillus*	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Threadleaf, *P. filiformis*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Variable Leaf, *P. diversifolius*	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Parrotfeather, *Myriophyllum aquaticum*	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Water Stargrass, *Heteranthera spp*.	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2

* Suppression only

The following charts indicate the quantity of Cascade to be applied.

Gallons of Cascade to Treat One Acre-Foot of Water

	Rate (ppm)						
	0.75	**1.0**	**1.5**	**2.0**	**3.0**	**4.0**	**5.0**
1 acre ft	**gallons/A-ft**						
	0.45	0.6	1.0	1.3	1.9	2.6	3.2

Fluid Ounces of Cascade to Treat 1,000 Square-Feet per Foot of Depth

	Rate (ppm)						
	0.75	**1.0**	**1.5**	**2.0**	**3.0**	**4.0**	**5.0**
1000 ft^2	**Fl oz/1000 ft^2**						
	1.4	1.9	2.8	3.8	5.7	7.6	9.4

IRRIGATION SYSTEMS AND FLOWING WATER TREATMENTS: DRIP OR METERING SYSTEM APPLICATIONS

For aquatic plant control in flowing water, Cascade use rates can be found in the following chart. Apply Cascade in a manner to achieve the desired rate and adequate mixing so product is distributed throughout the entire water column. Adequate concentration (rate) and exposure time (length of treatment) will impact Cascade efficacy on the target plant species. Although Cascade is a contact herbicide adequate exposure time is critical. The following rate chart has been developed based on Concentration Exposure Time (CET) data for Cascade. The CET concept allows rates and the length of exposure to be adjusted for different treatment scenarios.

CASCADE APPLICATION RATES FOR DRIP OR METERED APPLICATIONS TO IRRIGATION SYSTEMS AND FLOWING WATER

Plant Species	Length of Treatment (hours)							
	6	8	12	18	24	36	48	72
	Rate (ppm)							
Pondweeds (*Potamogeton* spp.) Sago Pondweed (*Stuckenia pectinata*)	4.0-5.0	3.0-4.0	2.0-3.0	1.5-2.5	1.0-2.0	0.75-1.5	0.5-1.0	0.5
Milfoil (*Myriophyllum* spp.) Parrotfeather (*Myriophyllum aquaticum*) Coontail (*Ceratophyllum* spp.) Horned pondweed (*Zannichellia*) spp.) Hydrilla (*Hydrilla verticillata*) Naiad (*Najas* spp.) Water Stargrass (*Heteranthera* spp.)	5.0	4.0-5.0	3.0-4.0	2.0-3.0	1.5-2.5	1.0-2.0	0.75-1.5	0.5-1.0

NOTE: Hygrophila (*Hygrophila polysperma*) may be suppressed at the higher application rates listed in this table.

Restrictions: Do not apply more than 30 ppm per growing season, not to exceed 5 ppm per application. Do not apply more than a total of 5 ppm within a 7-day interval.

Note: There is no Pre-harvest Interval (PHI) for crops irrigated with treated water.

To calculate the amount of Cascade required for a particular treatment use the following formula;

[Cubic Feet per Second (CFS) X Length of Treatment (hrs) X rate (ppm)] x 0.052947 = Gallons of Cascade needed for treatment

To calculate the amount of Cascade to be applied per hour use the following formula:

Gallons of Cascade per hour = Total gallons of Cascade / Length of Treatment (hrs)

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in the original container. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. Storage at temperatures below 32°F may result in the product freezing or crystallizing. Should this occur the product must be warmed to 50°F or higher and thoroughly agitated. In the event of a spill during handling or storage, absorb with sand or other inert material and dispose of absorbent in accordance with the Pesticide Disposal Instructions listed below.

Pesticide Disposal: Pesticide wastes are acutely hazardous. 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 Handling:
(for Nonrefillable containers)
Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

For containers 5 gallons or less:
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 ¼ 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.

Or

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For containers more than 5 gallons:

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Or

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Pour or pump rinsate into application equipment or rinsate collection system. Drain for 10 seconds after the flow begins to drip.

Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(for Refillable containers)
Refillable container. Refill this container with pesticide only. Do not use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

EMERGENCY TELEPHONE NUMBERS
CHEMTREC: (800) 424-9300
MEDICAL: (866) 673-6671 Rocky Mountain Poison Control Center

IMPORTANT INFORMATION
READ BEFORE USING PRODUCT

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 reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as 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 United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

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