

# CHINOOK®

## AQUATIC HERBICIDE

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

**ACTIVE INGREDIENTS:**

Dipotassium salt of endothall* . . . . .	13.3%
2,4-dichlorophenoxyacetic acid, dimethylamine salt** . . . . .	6.5%

**OTHER INGREDIENTS:** . . . . . 80.2%

**TOTAL:** . . . . . 100.0%

\* (1.22 lbs. dipotassium salt per gallon)

\*\* (0.50 lb. acid equivalent per gallon)

EPA Reg. No. 70506-321

**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	
<b>IF IN EYES:</b>	<ul style="list-style-type: none"><li>• Hold eyes 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>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 by a poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<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>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical treatment, call the Rocky Mountain Poison and Drug Center at 1-866-673-6671.	
<b>Note to Physician:</b> Probable mucosal damage may contraindicate the use of gastric lavage.	

Net Contents: \_\_\_\_\_ Gallons



**United Phosphorus, Inc.**  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406 • 1-800-438-6071

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

**DANGER.** Corrosive. Causes irreversible eye damage. Do not get in eyes, on skin, or on clothing. May be fatal if swallowed. Harmful if inhaled, or absorbed through the skin. Do not mix or allow to come in contact with oxidizing agents, as a hazardous chemical reaction may occur. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

### PHYSICAL AND CHEMICAL HAZARDS

Do not mix or allow to come in contact with oxidizing agents, as a hazardous chemical reaction may occur.

### Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are made of any waterproof material.

#### All mixers, loaders, other applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves made of barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, polyvinylchloride  $\geq 14$  mils, or viton  $\geq 14$  mils.
- Protective eyewear (goggles or face shield)
- Chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

See Engineering Controls for additional requirements.

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

### Engineering Controls

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

#### User Safety Recommendations

Users should:

- Wash hands 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

This product is toxic to mammals, fish, and aquatic invertebrates. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters or rinsate.

This product has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

**Aquatic Weed Control:** Treatment of aquatic plants can result in oxygen loss from decomposition of dead weeds. This loss can cause fish suffocation. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State agency with primary responsibility for regulating pesticides before applying to public waters to determine if a permit is needed.

### DIRECTIONS FOR USE

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

Read all Directions for Use carefully before applying.

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.

### STORAGE AND DISPOSAL

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

**Pesticide Storage:** Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. 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.

#### Nonrefillable containers 5 gallons or less:

**Container Handling:** Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure 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.

**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.

*(continued)*

## STORAGE AND DISPOSAL *(continued)*

### Non-refillable containers more than 5 gallons:

Non-refillable container. Do not reuse or refill this container. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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 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 by other procedures allowed by state and local authorities.

## EMERGENCY TELEPHONE NUMBERS

**CHEMTREC: (800) 424-9300**

**MEDICAL: (866) 673-6671**

**Rocky Mountain Poison and Drug Center**

## USE RESTRICTIONS

- Chemigation: Do not apply this product through any type of irrigation system.
- Do not apply more than 11.6 gallons of Chinook per acre foot per application.
- Do not apply by air.
- Do not apply within 21 days of previous application.
- Do not apply more than 2 applications per season.
- Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits.
- Do not use Chinook in brackish or saltwater

Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in Washington Toxics Coalition et al. v. EPA, C01-0132C, (W.D. W.A.).

For further information, please refer to EPA website: <http://www.epa.gov/espp/litstatus/wtc/index.htm>.

## SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

### Wind Speed

Do not apply at wind speeds greater than 15 mph. Apply this product only if the wind direction favors on-target deposition and there are not sensitive areas (including residential areas, bodies of water, known

habitat for beneficial nontarget plants) within 250 feet downwind. If applying a medium spray, leave one swath unsprayed at the downwind edge of the treated field.

### Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include cotton, okra, flowers, fruit trees, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that may not be visible may injure susceptible broadleaf plants.

### Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of Chinook herbicides. Where states have more stringent regulations, they must be observed.

### Equipment

All application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

**Handguns and Boomless Nozzles:** Applications are best applied with nozzles delivering a coarse or very coarse spray volume.

## MIXING DIRECTIONS

### Tank Mixing

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions, limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. Do not exceed any active ingredient's maximum use rates when tank mixing. Do not tank mix this product with any product containing a label prohibition against tank mixing with products containing 2,4-D or endosulfan.

**Tank Mix Compatibility Testing:** A jar test is recommended prior to tank mixing to ensure compatibility of this product and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture forms flakes, sludge, oily film, layers, or other precipitate, it is not compatible and the tank mix combination should not be used.

### Sprayer Clean-Out

To avoid injury to non-target plants, thoroughly clean equipment used to apply this product before re-use or applying other chemicals.

1. Rinse and flush application equipment thoroughly after use at least three times with water. Dispose of all rinse water by application to treatment area or apply to non-cropland area away from water supplies.
2. During the second rinse, add 1 quart of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Remove nozzles and screens and clean separately.
6. If equipment is to be used to apply another pesticide, additional steps may be required to remove all traces of this product, including cleaning of disassembled parts and replacement of hoses or other fittings that may contain absorbed Chinook.

### APPLICATION DIRECTIONS

Apply with calibrated equipment using sufficient volume to provide adequate coverage of target weeds or as otherwise directed in specific use directions.

#### Restrictions:

- When treating slow moving bodies of water, applications must be made while traveling upstream to prevent concentration of Chinook downstream from the application.

#### Water for Irrigation or Sprays:

If treated water is intended to be used only for crops or non-crop areas that are labeled for direct treatment with 2,4-D such as pastures, turfgrass or cereal grains, the treated water may be used to irrigate and/or mix sprays for these sites at any time after the Chinook aquatic application.

Due to potential phytotoxicity and/or residue considerations, the following restrictions are applicable:

If treated water is intended to be used to irrigate or mix sprays for crops, non-crop areas or other plants not labeled for direct treatment with 2,4-D, the water must not be used unless one of the following restrictions has been observed:

- A setback distance described in the Drinking Water Setback Table (Table 1) was used for the application, or,
- A waiting period of 21 days from the time of application has elapsed, or,
- An approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less at the water intake. See Table 2 for the waiting period after application but before taking the initial sampling at water intake.

#### Drinking Water (Potable Water):

The potable water use restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of 2,4-D in the water is less than the MCL (Maximum Contaminant Level) of 70 ppb (0.07 ppm) and endothall is less than 0.1 ppm. Applicators should consider the unique characteristics of the treated waters to assure that Chinook concentrations in potable water do not exceed the MCL for either ai at the time of consumption.

For submersed weed applications, the drinking water setback distances from functioning potable water intakes are provided in Table 1 Drinking Water Setback Distance (below).

Following each application of this product, treated water must not be used for drinking water unless one of the following restrictions has been observed:

- A setback distance described in the Drinking Water Setback Distance Table (Table 1) was used for the application, or,
- A waiting period of at least 21 days from the time of application has elapsed, or,
- An approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) or less and endothall is 0.1 ppm at the water intake. Sampling for drinking water analysis should occur no sooner than stated in Table 2.

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.

**Table 1: Drinking Water Setback Distance**

Application Rate and Minimum Setback Distance From Functioning Potable Water Intake		
Up to 6 Gallons per Acre Ft.	6.1 to 8.75 Gallons per Acre Ft.	8.76 to 11.5 Gallons per Acre Ft.
600	900	1200

**Table 2: Sampling for Drinking Water Analysis After Application**

Minimum Days After Application Before Initial Water Sampling at the Functioning Potable Water Intake		
Up to 6 Gallons per Acre Ft.	6.1 to 8.75 Gallons per Acre Ft.	8.76 to 11.5 Gallons per Acre Ft.
5 days	7 days	10 days

## **QUIESCENT OR SLOW MOVING WATER TREATMENTS: SURFACE OR INJECTED APPLICATIONS**

Spray Chinook on the water or inject below the water surface. It may be applied as a concentrate or diluted with water depending on the equipment.

For aquatic plant control in quiescent or slow moving water, product use rates can be found in the following chart. Since the active ingredients are water soluble and tend 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 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 Chinook.

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

Apply 1.75-11.67 gallons of Chinook per acre foot (0.3-2 ppm 2,4-D and 0.75-5 ppm endothall). See table below for specific rates to control target weed species.

### **PLANTS CONTROLLED AND CHINOOK DOSAGE RATES FOR SURFACE OR INJECTED APPLICATION IN QUIESCENT OR SLOW-MOVING WATER**

	<b>APPLICATION RATE</b>					
	<b>Entire Pond/Lake, Large Area Treatment</b>			<b>Spot or Marginal Treatment</b>		
	<b>ppm Dipotassium Endothall</b>	<b>ppm 2,4-D acid</b>	<b>Gallons Chinook per Acre Ft.</b>	<b>ppm Dipotassium Endothall</b>	<b>ppm 2,4-D acid</b>	<b>Gallons Chinook per Acre Ft.</b>
Coontail, <i>Ceratophyllum</i> spp.	2.0-3.0	0.8-1.2	4.67-7.0	3.0-5.0	1.2-2.0	7.0-11.67
Horned Pondweed, <i>Zannichellia palustris</i>	2.0-3.0	0.8-1.2	4.67-7.0	3.0-5.0	1.2-2.0	7.0-11.67
Sago Pondweed, <i>Stuckenia pectinata</i>	1.0-2.0	0.4-0.8	2.33-4.67	2.0-5.0	0.8-2.0	4.67-11.67
Hydrilla, <i>Hydrilla verticillata</i>	1.0-4.0	0.4-1.6	2.33-9.33	2.0-5.0	0.8-2.0	4.67-11.67
Hygrophila*, <i>Hygrophila polysperma</i>	4.0-5.0	1.6-2.0	9.33-11.67	5.0	2.0	11.67
Milfoil, <i>Myriophyllum</i> spp.	0.75-2.0	0.3-0.8	1.75-4.67	3.0-5.0	1.2-2.0	7.0-11.67
Naiad, <i>Najas</i> spp.	2.0-4.0	0.8-1.6	4.67-9.33	3.0-5.0	1.2-2.0	7.0-11.67
Pondweed, <i>Potamogeton</i> spp. Including:	0.75-3.0	0.3-1.2	1.75-7.0	1.5-5.0	0.6-2.0	3.5-11.67
American, <i>P. nodosus</i>	2.0-3.0	0.8-1.2	4.67-7.0	3.0-5.0	1.2-2.0	7.0-11.67
Largeleaf (Bass Weed), <i>P. amplifolius</i>	2.0-3.0	0.8-1.2	4.67-7.0	3.0-5.0	1.2-2.0	7.0-11.67
Curlyleaf, <i>P. crispus</i>	0.75-1.5	0.3-0.6	1.75-3.5	1.5-5.0	0.6-2.0	3.5-11.67
Flatstem, <i>P. zosteriformis</i>	2.0-3.0	0.8-1.2	4.67-7.0	3.0-5.0	1.2-2.0	7.0-11.67
Floating-leaf, <i>P. natans</i>	1.0-2.0	0.4-0.8	2.33-4.67	2.0-5.0	0.8-2.0	4.67-11.67
Illinois, <i>P. Illinoensis</i>	1.5-2.5	0.6-1.0	3.5-5.83	2.5-5.0	1.0-2.0	5.83-11.67
Narrowleaf, <i>P. pusillus</i>	1.0-2.0	0.4-0.8	2.33-4.67	2.0-5.0	0.8-2.0	4.67-11.67
Threadleaf, <i>P. filiformis</i>	2.0-3.0	0.8-1.2	4.67-7.0	3.0-5.0	1.2-2.0	7.0-11.67
Variable Leaf, <i>P. diversifolius</i>	1.0-2.0	0.4-0.8	2.33-4.67	2.0-5.0	0.8-2.0	4.67-11.67
Parrotfeather, <i>Myriophyllum aquaticum</i>	2.0-3.0	0.8-1.2	4.67-7.0	3.0-5.0	1.2-2.0	7.0-11.67
Water Stargrass, <i>Heteranthera</i> spp.	0.75-2.0	0.3-0.8	1.75-4.67	3.0-5.0	1.2-2.0	7.0-11.67

\*Suppression only

**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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