

# Willowood THIONILEC

PROPANIL	GROUP	7	HERBICIDE
THIOBENCARB	GROUP	8	HERBICIDE

For Use in Rice for Post-Emergence Control of Broadleaf and Grass Weeds.

<b>Active Ingredients:</b>	<b>By Weight</b>
Propanil (3',4'-Dichloropropionanilide) .....	35.0%
Thiobencarb (S-[(4-chlorophenyl)methyl] diethylcarbamothioate) .....	31.0%
<b>Other Ingredients:</b> .....	34.0%
<b>TOTAL:</b> .....	<b>100.0%</b>

Willowood Thionil EC contains 3 lbs. propanil per gallon and contains 3 lbs. thiobencarb per gallon.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

## FIRST AID

**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 to do so by a poison control center or doctor. Do not give anything to an unconscious person. **If in Eyes:** Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. **If on Skin or Clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 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 an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

## HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For 24-Hour Medical Emergency Assistance (Human or Animal), call: **1-800-222-1222**. For Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), call CHEMTREC: **1-800-424-9300**.

**Note To Physician:** Contains petroleum distillates. May cause chemical pneumonitis if aspirated. If lavage is performed, suggest endotracheal and/or esophagosopic control.

See label booklet for complete Precautionary Statements, Directions For Use, and Storage and Disposal.

EPA Reg. No. 87290-74

Manufactured For:

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20210903

# **PRECAUTIONARY STATEMENTS**

## **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

### **CAUTION**

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

### **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**Mixers, loaders, ground applicators, and other handlers cleaning up spills or equipment or otherwise exposed to the concentrate and handlers removing an unrinsed probe must wear the following:**

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves, such as Barrier Laminate, Butyl Rubber  $\geq 14$  mils
- Chemical-resistant footwear plus socks
- Protective eyewear, if the system operates under pressure
- Chemical-resistant apron when mixing and loading

**Pilots and handlers removing a triple-rinsed probe must wear:**

- Long-sleeved shirt and long pants
- Shoes and socks

See **ENGINEERING CONTROLS** for additional requirements.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. 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.

**All workers must wear:** Chemical-resistant footwear plus socks when entering flooded fields following treatment.

## ENGINEERING CONTROLS

### Mixers and loaders must either:

1. Use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for dermal protection of agricultural pesticides [40 CFR 170.240(d)(4)].

**-OR-**

2. Use the probe system described below:

#### **PROBE SYSTEM**

Specific requirements for use of the probe in closed mixing/loading system:

- Remove plug from bung of drum containing this product only when drum is sitting on the ground or on a secure level platform, with the bung end of the drum pointed up.
- Do not pour this product from its drum.
- Transfer product from the drum to the mixing tank by use of suction hose connected at one end to the suction pump on the mixing tank and connected at the other end to a probe (dip tube) that is inserted through the bung opening into the drum.
- Do not handle the probe or bung in a manner that allows dripping or splattering of the product onto yourself or any other person.
- Do not touch the portion of the probe that has been in contact with this product until after the probe has been triple rinsed with water.
- If all of the product is removed from the drum, then triple rinse the probe while it remains inside the drum.

#### **UN-RINSED PROBES**

- If an un-rinsed probe must be removed from the drum, then use an anti-drip flange, and immediately transfer the probe into a container of rinse water. The anti-drip flange must be designed to remove excess product from the probe as it is extracted from the drum.
- Take the following steps if the probe must be disconnected from the suction hose before both the probe and the hose have been triple rinsed:
  - 1) Equip the probe end of the hose with a shut off valve,
  - 2) Install a dry break coupling between the valve and the probe,
  - 3) Close the shut-off valve before disconnecting the probe.

## PPE FOR ALL TRANSFER SYSTEMS

### In addition, mixers, and loaders using all systems must:

- Wear the personal protective equipment required in the PPE section of this labeling for mixers and loaders,
- Wear protective eyewear, if the system operates under pressure, and
- When using a system that meets the requirements in the WPS as a closed system or using a probe system when the probe is not removed, chemical-resistant footwear must be provided, be immediately available, and be used in an emergency, such as a broken package, spill, or equipment breakdown.

All systems must be capable of removing the pesticide from the shipping container and transferring it into mixing tanks and/or application equipment. At any disconnect point, the system must be equipped with a dry disconnect or dry couple shut-off device that is warranted by the manufacturer to minimize drippage.

## ENGINEERING CONTROLS FOR ALL TRANSFER SYSTEMS

**Flaggers:** Human flagging is prohibited. Flagging to support aerial application is limited to use of the Global Position System (GPS) or mechanical flaggers.

**Aerial Applicators:** Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

## USER SAFETY RECOMMENDATIONS

### Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling the product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## ENVIRONMENTAL HAZARDS

This product is toxic to fish and aquatic invertebrates. For terrestrial uses, do not apply directly to water, to areas where surface water is present or intertidal areas below the mean high-water mark. Do not contaminate water when disposing of equipment washwaters. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water intended for irrigation or domestic purposes. Do not apply when weather conditions favor drift from area to be treated.

**Groundwater Advisory:** This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical prior to flooding may result in shallow groundwater contamination due to cracks in the subsoil of the rice paddy.

**Surface Water Advisory:** This product may contaminate water through runoff following rainfall events and by seepage through levees. This product has a high potential for runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Levees should be constructed with adequate time prior to chemical application so that they are compacted to reduce seepage and to hold a 3-6 inch flood.

The use of this product on rice is restricted to protect the endangered fat pocketbook pearly mussel (*Potamilus capax*) and its habitat. See '**PRODUCT PRECAUTIONS AND RESTRICTIONS**' section of this label.

### **PHYSICAL/CHEMICAL HAZARDS**

Do not use or store near open flame. Do not mix or allow coming in contact with oxidizing agents. Hazardous chemical reaction may occur.

### **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
- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of waterproof materials
- Chemical-resistant footwear plus socks
- Protective eyewear

## DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### RESISTANCE MANAGEMENT

**Willowood Thionil EC** contains both propanil (classified in the amide chemical class as a Group 7 herbicide, photosynthesis inhibitor) and thiobencarb (classified in the thiocarbamate chemical class as a Group 8 herbicide, lipid synthesis inhibitor).

Herbicide resistance is defined as the inherited ability of a plant to survive and reproduce following exposure to a dose of herbicide normally lethal to the wild type. In a plant, resistance may be naturally occurring or induced by such techniques as genetic engineering or selection of variants produced by tissue culture or mutagenesis. Any weed population may contain or develop plants that are naturally resistant to **Willowood Thionil EC** and other Group 7 and 8 herbicides. Weed species with acquired resistance to Group 7 and 8 herbicides may eventually dominate the weed population if Group 7 and 8 herbicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by **Willowood Thionil EC** or other Group 7 and 8 herbicides.

To delay herbicide resistance, consider the below best practices for resistance management:

- Plant into weed-free fields and keep fields as weed-free as possible.
- To the extent possible, use a diversified approach toward weed management. Whenever possible, incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
- To the extent possible, do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules. Thoroughly clean plant residues from equipment before leaving fields.
- Prevent an influx of weeds into the field by managing field borders.

- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.
- Use a broad-spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.
- Monitor treated weed populations for loss of field efficacy.
- Scout field(s) before and after application.
- Report lack of performance to registrant or their representative.

Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species.

Contact your local sales representative, extension agent, or certified crop advisors to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action for each target weed.

### **Integrated Pest Management**

Integrate **Willowood Thionil EC** into an overall pest management strategy whenever the use of an herbicide is required. Practices known to aid in pest management include scouting, proper weed identification and proper application timing and should be followed wherever possible. Consult local agricultural or weed control experts for additional IPM strategies established for your area and to understand treatment thresholds and application timing for your area.

## USE RESTRICTIONS

- Not registered for use or sale in California.
- DO NOT make application of this product through any type of irrigation system.
- **Arkansas:** The below use prohibitions apply in the counties of Cross, Lee, Mississippi, Poinsett and St. Francis:
  - 1) **Do not apply Willowood Thionil EC** aerially within one mile of the St. Francis Floodway (west branch of St. Francis River) where the fat pocketbook pearly mussel is known to exist;
  - 2) **Do not apply Willowood Thionil EC** by ground within 1,000 feet of the St. Francis Floodway where the fat pocketbook pearly mussel is known to exist;
  - 3) Do not flood rice fields for at least 3 days following application, and do not drain fields for at least 7 days after flooding a treated field in areas where waters drain into the St. Francis Floodway where the fat pocketbook pearly mussel is known to exist; and
  - 4) There are on-going distributional surveys of the fat pocketbook pearly mussel habitat. If these surveys find additional populations in the St. Francis Floodway, or other waters, the same restrictions would apply to these waters.
- DO NOT make application of this product south of the Intracoastal Waterway in Louisiana.
- DO NOT make application of this product within two (2) miles from the shorelines of Matagorda Bay in Texas.
- DO NOT make application of this product within two (2) miles from the shorelines of Galveston Bay in Texas.
- DO NOT plant or transplant crops in the treated area for 60 days after an application of this product.
- DO NOT make application of more than 5.3 qts. **Willowood Thionil EC** per acre per treatment.
- DO NOT make application of more than 5.3 qts. **Willowood Thionil EC** (4 lbs. active ingredient propanil/4 lbs. active ingredient thiobencarb) per year.
- DO NOT apply more than two applications per year.
- Do not make application of this product where catfish/crayfish farming is practiced and draining water from treated fields into areas where catfish farming is practiced for 12 months following application. Do not use this product in areas that are adjacent to catfish/crayfish ponds.
- Do not make application of this product to a second stubble rice crop in Texas and other areas where double cropping is the agricultural practice.
- DO NOT make application of 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.



- DO NOT make application of this product (directly or indirectly) to any crop except rice.
- DO NOT release permanent flood water within 14 days of treatment with this product (where weather permits).
- Avoid use of this product within 24 hours of rainfall, or when heavy rain is expected to occur within 24 hours of application.
- DO NOT make application when wind conditions will allow drift to adjacent, susceptible crops, including - beans, soybeans, cotton, safflower, cucurbits, vegetables, orchards, and other crops that are sensitive.
- DO NOT harvest within 60 days of treatment.
- Water drained from rice fields that have been treated with this product must not be used to irrigate other crops or be released within ½ miles upstream of a potable water intake in flowing water (i.e., river, stream, etc.) or within ½ miles of a potable water intake in a standing body of water such as a lake, pond, or reservoir.
- DO NOT make application within 14 days before or following organophosphate or carbamate insecticide treatment.
- DO NOT make application when rain is expected within 6 hours.
- Rice seedlings with succulent growth may show temporary foliar burn which may be greater than conventional propanil treatment, but the plant will typically recover after 10 to 14 days.
- DO NOT mix with liquid nitrogen, surfactants, or zinc.
- DO NOT make application in excess of label use rate.
- DO NOT make application to second crop (stubble crop) rice.
- DO NOT make application to fields with exposed seed as exposed seed will be killed.
- DO NOT overlap or double spray ends of field.
- DO NOT make application when temperature exceeds 90°F.
- DO NOT mix/load or otherwise handle this product within 100 feet of aquatic habitat.
- Do not mix this product with any product containing a label prohibition against such mixing.

### **PRECAUTIONS**

Applying this product to rice that is stressed can lead to reduction in crop stand, chlorosis, inhibition of growth, delayed maturity and/or leaf desiccation. Stress conditions include, but are not limited to: daily temperatures below 65°F or above 95°F, soils with identified issues, (for example, Zn deficiency, high salt content, high pH), excessive moisture above field capacity while rice seed is germinating, drought conditions, fields that are poorly drained, or deep water following application.

## PRODUCT INFORMATION

To achieve optimum product performance of selective weed control, the following important factors should be taken into consideration: growth stage, making uniform application and weather conditions before, during and after application. To ensure uniform application, shake or roll container before opening and mix the specified amount of product with a sufficient volume of carrier to provide thorough coverage of the area to be treated. For applications by air, use approximately 10 gallons spray volume, and for surface (ground) applications 20-30 gallons of spray volume carrier per acre applied at a sufficient level of pressure to provide uniform coverage. During tank mix preparation, mix ingredients well, and maintain agitation continuously throughout application. Avoid over and under application.

Making the application at the appropriate growth stage of the weeds is very important. For optimum performance of selective weed control, make application when most grasses have reached the 1- to 3-leaf stage. Preparing the field according to good field management techniques is essential to obtain a relatively clod-free and level surface, to provide for uniform flood levels and crop growth. Fields may be flushed before treatment to provide for uniform and vigorous grass germination and growth. Before applying this product, drain water from fields. Where a rate range is listed, the higher specified rates may be used to control larger grass weeds or exposed weeds when rice fields are not completely drained. Monitor and inspect the rice fields regularly to determine the correct application timing.

## WEATHER CONDITIONS

Observe weather conditions closely. When conditions are cool, use the higher rates listed within the range, as these are required to achieve sufficient control. Avoid making application if rain is forecast within 6 to 8 hours. Do not apply if wind velocities are high enough to cause drift and irregular spray patterns.

**Temperature:** The temperature prior to and during an application, can affect product performance on target weeds. Treatments should be made when the daily maximum temperatures are between 75°F and 100°F. Weed control decreases when temperatures are below 75°F and improves with temperatures above 75°F.

**Application Timing:** This product normally requires 8 hours of direct sunlight following treatment to allow for product absorption into target weeds. There are atmospheric and environmental conditions that can affect absorption of the product into the target weeds. For optimum product performance, the application timing of product should be made to allow for the product to have contact with the leaf surfaces for at least 48 hours before rainfall or flooding. Typically, applications of propanil products (including **Willowood Thionil EC**) made in the morning, produce better weed control results.

**Relative Humidity:** This herbicide works by direct contact with the target weed and humidity can impact the product performance. When there is high humidity and dew, weed control may be improved by allowing the product to remain in solution longer on the leaf surface. When humidity is low the plant activity decreases and reduces product absorption into the plant. If making aerial application during periods of very low humidity, use higher spray volumes of 8-10 gallons per acre.

**Soil Moisture:** When conditions are dry, grass and broadleaf weeds are less susceptible to control. To achieve control, use the higher rates listed in the rate range, up to 5.3 quarts per acre.

**Wind:** Do not apply if wind velocity is high enough to cause drift of the application spray off the target site or irregular spray patterns.

### **SPRAY DRIFT MANAGEMENT**

Avoiding spray drift at the application is the responsibility of the applicator and the grower. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering these factors when making application decisions. Apply only when the wind speed is less than or equal to 10 mph at the application site. Apply as a medium or coarser spray (ASAE standard 572).

**Additional Requirements for Ground Applications:** Apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

#### **Droplet Size Information**

Reduce drift potential by applying droplets of size >150 - 200 microns. The optimum drift management strategy is to apply the largest droplets that will provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. Applying larger droplets reduces drift potential, but will not prevent drift when applications are made improperly, or under unfavorable environmental conditions (see **Wind, Temperature and Humidity, and Temperature Inversions**).

#### **Controlling Spray Droplet Size**

**Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows usually 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** – The recommended practice is to orient nozzles so that the spray is released parallel to the airstream. This orientation usually produces larger droplets as compared to other nozzle orientations. Significant nozzle deflection from horizontal will reduce droplet size and increase drift potential.

**Boom Length** – The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

**Application Height** – Do not release spray at a height greater than 10 feet above the ground or crop canopy. 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 upwind and downwind edges of the field, the applicator must compensate for this displacement by the path of the aircraft upwind. Swath adjustment or offset distance should increase when conditions favor increased drift potential (higher winds, smaller droplets etc.).

**Wind** – Drift potentials are lowest between wind speeds of 3 to 10 miles per hour. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. Applications in wind conditions outside of this range could increase the risk of off-target effects and should be avoided. Note that 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 conditions of 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** – Do not apply **Willowood Thionil EC** during temperature inversions because the 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 following 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 a smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicate 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 sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops).

## MIXING & LOADING INSTRUCTIONS

### Wet Spray Application

Mix **Willowood Thionil EC** with clean water in the spray tank. Use only approved drift control agents with **Willowood Thionil EC**.

Agitate the mixture prior to application and maintain agitation to provide for uniform mixing and application. If the mixture is not sprayed immediately following initial tank preparation, mix thoroughly prior to applying. Always make application within 24 hours of product mixing to avoid product degradation.

### Restrictions:

- Do not use water from paddies or water that is otherwise contaminated or dirty.
- Do not use any other additives unless directed by this label.
- Do not store in nurse tanks or any other tanks used to store or transport clean water. Install one-way valves (anti-siphoning devices) on lines and hoses of mixing/loading equipment to prevent contamination of nurse tanks or other clean water sources.
- Do not use mixing and application equipment exposed to **Willowood Thionil EC** for anything other than rice applications until it has been cleaned according to the **SPRAY EQUIPMENT CLEAN-OUT** section of this label.

### Additional Mixing Instructions

1. Fill the spray tank  $\frac{1}{4}$  to  $\frac{1}{3}$  with clean water as the carrier.
2. Begin agitation and add the specified amount of **Willowood Thionil EC**.
3. Maintain agitation until the product is fully dispersed for at least 5 minutes.
4. Then, while maintaining agitation fill the tank with water. The product should be thoroughly mixed with water prior to adding any other material.
5. While the tank is filling, add any tank mix partner (other labeled rice herbicides, adjuvants, drift control agents, etc.).
6. Settling may occur if the constant agitation is not maintained. If settling does occur, thoroughly mix before using.
7. Make application within 24 hours of product mixing, or the product may degrade.
8. Pre-slurry the product in clean water before adding to the tank if product and a tank mix partner will be applied in multiple loads. This will prevent the tank mix partner from affecting the dissolution of the **Willowood Thionil EC**.

## SPRAY EQUIPMENT CLEAN-OUT

**As soon as possible, thoroughly clean spray equipment using the procedure below after application of Willowood Thionil EC and before using spray equipment for any other applications:**

1. Use a non-chlorine-based detergent and steam-clean the tank. Be sure to remove all physical residues.
2. Thoroughly rinse the application equipment with clean water: including sprayer, tanks, boom, and hoses.
3. Fill the tank half full with clean water and add a tank cleaning solution as directed. Fill the tank to capacity with clean water. Flush the nozzles, boom, and hoses, and agitate for at least 15 minutes (if possible, recirculate). Then, drain the equipment, and flush the boom and hoses thoroughly.
4. Rinse tanks, hoses and nozzles with clean water to remove any tank cleaning solution residue.
5. Next, fill the tank half full with clean water and add 1 gal. of 21% ammonia or 7 gals. of 3% ammonia per 100 gals. of water. Fill the tank to capacity with clean water and flush the nozzles, boom, and hoses while agitating for at least 15 minutes (if possible, recirculate). Then, drain the equipment, and flush the boom and hoses thoroughly.
6. Remove and clean nozzles, screens, and strainers, separately.
7. Rinse the spray tank, booms, and hoses with clean water.
8. Repeat steps 5 and 7, 3 more times.
9. Rinse the spray tank, booms, and hoses to remove any ammonia residue.
10. The rinse water may be applied to rice fields. Dispose of bleach rinses at an approved waste disposal facility.

**NOTE:** When making application of this product in multiple loads for several days in a row, the following procedure must be performed at the end of each day: Fill the tank partially with fresh water, flush the boom and hoses, and allow to sit overnight.

**Restriction: DO NOT MIX** chlorine bleach with ammonia. All liquid fertilizer containing ammonia, ammonium nitrate or ammonium sulphate residues must be rinsed from the mixing and application equipment with water prior to adding chlorine bleach solution. Mixing chlorine bleach with ammonia will release a gas with a musty chlorine odor that can cause eye, nose, and throat and lung irritation. Do not clean equipment in an enclosed area.

Clean-up procedures on batch tanks and any other mixing equipment should be done separately from aircraft application equipment. Care should be given to clean all loading hoses and any other equipment or surfaces exposed to this product.

## LIST OF WEEDS CONTROLLED

**Note:** This product will not control Arrowhead, Bermudagrass, Cattail, Ducksalad, Johnsongrass, Nutgrass, and Red Rice.

Common Name	Scientific Name
Barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>
Coffeebean	<i>Hemp Sesbania</i>
Coffeeweed	<i>Sesbania herbacea</i>
Crabgrass	<i>Digitaria</i> spp.
Cockspur, Gulf	<i>Echinochloa crus-pavonis</i>
Croton	<i>Croton</i> spp.
Dayflower	<i>Commelina communis</i>
Ducksalad, Small*	<i>Heteranthera</i> spp.
Eclipta	<i>Eclipta prostrata</i>
False Pimpernel	<i>Lindernia</i> spp.
Flatsedge	<i>Cyperus erythrorhizos, C. iria</i>
Foxtail	<i>Setaria</i> spp.
Goosegrass	<i>Eleusine indica</i>
Hemp Sesbania	<i>Sesbania exaltata</i>
Hoorahgrass	<i>Fimbristylis</i> spp.
Indigo	<i>Aeschynomene virginica</i>
Jointvetch, Northern and Indian	<i>Aeschynomene</i> spp.
Junglerice	<i>Echinochloa colonum</i>
Mexicanweed	<i>Caperonia castanifolia</i>
Millet (Texas)	<i>Urochloa texana</i>
Morningglory, Pitted	<i>Ipomoea lacunosa</i>
Nutsedge, Yellow	<i>Cyperus esculentus</i>
Panicum, Fall	<i>Panicum dichotomiflorum</i>
Paragrass	<i>Urochloa mutica</i>

\*Before spoon leaf stage.

(continued)

## LIST OF WEEDS CONTROLLED (continued)

Common Name	Scientific Name
Pigweed	<i>Amaranthus</i> spp.
Redstem	<i>Ammannia</i> spp.
Sicklepod	<i>Cassia obtusifolius</i>
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>
Smartweed	<i>Polygonum</i> spp.
Sourdock, Curly Dock	<i>Rumex crispus</i>
Spearhead	<i>Phacelia hastata</i>
Spikerush	<i>Eleocharis obtuse</i> , <i>E. parvula</i>
Sprangletop	<i>Leptochloa</i> spp.
Waterhyssop	<i>Bacopa rotundifolia</i>
Wiregrass	<i>Eleusine indica</i>

### EMERGENCY RELEASE PROVISIONS

#### **Water holding (discharge) intervals for flood water following propanil application in all states:**

For delayed flood (water-seeded) rice grown south of Interstate Highway 10 from the Texas/Louisiana border to Houston and east of State Highway 35 from Houston to Port Lavaca – Flood water must be held for 10 days after application, unless excessive rainfall completely submerges the rice crop and forces premature release. For Texas rice grown in areas north or west of these boundaries, the water holding interval will be 7 days.

For delayed flood (water-seeded) rice in Southern Louisiana south of Highway 14 – Flood water must be held for 15 days after propanil application unless excessive rainfall completely submerges the rice crop and forces premature release. Delayed flood (water-seeded) rice in Louisiana, north of Highway 14 boundary, is subject to the 7-day water holding interval provisions.

For rice grown in all other parts of the U.S. not mentioned above – Flood water must be held for 14 days when weather permitting after application, unless excessive rainfall completely submerges the rice crop and forces premature release.



## BROADCAST RATE

### Early Post-Emergence Application

For control of the following weeds: Barnyardgrass, Junglerice, Sprangletop, Broadleaf Signalgrass, Crabgrass, Fall Panicum, Ducksalad, Redstem, Waterhyssop, False Pimpernel, Flatsedge, Spikerush, Hoorahgrass, Hemp Sesbania, Northern and Indian Jointvetch, Dayflower, Eclipta, and Pitted Morningglory:

- **Wet Soil Application** – Make application to wet soil at the use rate of 3.0 qts. **Willowood Thionil EC** per acre by air or by ground for emerged grasses at the 2-leaf stage of development or less (Sprangletop less than ½”), on aquatic weeds less than ½” tall and on broadleaf weeds less than 2” tall. Application may be made to emerged rice.

**-OR-**

- **Dry Clay or Silt Loam Soil Application and Rice in the 2- to 3-Leaf Stage** – Make application to dry soil at the use rate of 3.0 qts. **Willowood Thionil EC** per acre by air or by ground for emerged grasses at the 2-leaf stage of development or less (Sprangletop less than ½”), on aquatics less than ½” tall and on broadleaf weeds less than 2” tall. At the time of treatment, the soil must have been previously sealed by rain or flushing and should not be cracked. Rice should be in the 2- to 3-leaf stage of development. The soil must be wet by rain or flushing within 3 days post application or a reduction in initial control and residual activity can result. Do not make application to rice that is stressed as it may be seriously injured or killed. If a flush is used to wet the soil or heavy rains move quickly through the flood gates, lack of weed control around the gates may result.

## WATER SEEDED RICE

**Early Post-Emergence:** For control of the following weeds - Barnyardgrass, Junglerice, Sprangletop, Broadleaf Signalgrass, Crabgrass, Fall Panicum, Ducksalad, Redstem, Waterhyssop, False Pimpernel, Flatsedge, Spikerush, Hoorahgrass, Hemp Sesbania Northern and Indian Jointvetch, Dayflower, Eclipta, and Pitted Morningglory:

- **Non-Flooded Field Application Only** – Make application to rice that is in the 2-leaf stage of development at a minimum and to soil that is sealed and wet at an application use rate of 3.0 qts. **Willowood Thionil EC** by air or by ground to emerged grass weeds at the 2-leaf stage of development or less (Sprangletop less than ½”) broadleaf weeds less than 2” tall and aquatics less than ½” tall).

### Application Instructions

**Aircraft:** Make application of **Willowood Thionil EC** in a minimum of 10 gallons spray volume per acre. Do not make application of more than 5.3 qts. **Willowood Thionil EC** per acre when applying by air east of the Rocky Mountains.

**Ground Sprayers:** Make application of **Willowood Thionil EC** in 10 to 20 gallons total spray volume per acre. Application should be made to grassy and weedy fields when there is a satisfactory established stand of rice that will tolerate flooding. The amount of **Willowood Thionil EC** herbicide to use depends upon the stage and growth condition of the grasses. The growth stage of the rice also impacts use rate selection and timing limitations. For optimum performance and to minimize residues, make application of **Willowood Thionil EC** herbicide at the rate of 3.0 - 5.3 qts. per acre when the grasses are actively growing in the 1- to early 4-leaf stage. This rate will provide control of many seedling broadleaf and aquatic weeds, as well. Typically, application timing will be 15 to 25 days after planting rice. To provide for sufficient weed control, do not make application of less than 2 ½ qts. of **Willowood Thionil EC** herbicide per acre in a single treatment.

Make application of **Willowood Thionil EC** herbicide at the rate of 4.0 - 5.3 qts. per acre to actively growing grasses in the 4- to 6-leaf and early tillering stage or when they are in the 2- to 4-leaf stage but stressed under dry soil conditions. Typically, this timing will be 20 to 30 days after planting the rice.

**CLEARFIELD® RICE**  
**Not registered for use in California.**

For post-emergence control of coffeebean, indigo, morningglory, eclipta, sicklepod, pigweed, smartweed, and yellow nutsedge, **Willowood Thionil EC** may be used on CLEARFIELD rice in combination with labeled rates and timings of Newpath®.

Make application of 2 - 4 qts. (determined by weed size and timing) per acre tank mixed with a post-emergent rice treatment of Newpath. An additional treatment of any propanil formulation may be made before flood as long as no single treatment exceeds 6 lbs. a.i. or a total of 8 lbs. a.i. per acre per year.

If **Willowood Thionil EC** is tank mixed with Newpath, consult the Newpath label for use with surfactants.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and 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.

**Emergency Treatment:** Make application of **Willowood Thionil EC** herbicide at the rate of 4.0 - 5.3 qts. in 15 gallons of spray volume per acre for emergency control of older tillering grass. Typically, the timing of application will be 30 to 40 days after planting. The water should be low-

ered or drained before spraying to expose more of the grass and weeds, if the field is already flooded. Emergency application should be considered only as a salvage operation and cannot be relied upon for total control of grass and weeds.

DO NOT MAKE APPLICATION AFTER THE END OF TILLERING FOR THE RICE VARIETY BEING TREATED TO AVOID EXCESSIVE RESIDUES AT TIME OF HARVEST.

Make application of 2 ½ qts. of product per acre when most grasses have reached the 1- to 3-leaf stage. Apply 4.0 - 5.3 qts. of product per acre when grasses are large (4- to 6-leaf stage) or when unseasonably cool weather conditions occur, grass and broadleaf weeds are stressed due to dry conditions or in cases where rice fields have not been drained completely and weeds are large enough.

Barnyardgrass may be controlled up to 30 to 45 days following planting, before rice plants have reached the fully tillered growth stage.

**Precaution:** Application of product to rice after the 4-leaf stage may cause visible injury under some climatic conditions. Rice plants typically outgrow such injury.

## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage or disposal.

**PESTICIDE STORAGE:** Open dumping is prohibited. Do not store this product near fertilizers, seeds, insecticides, or fungicides. Do not store near heat or open flame. Containers should not be stacked more than 4 containers high. Reclose all partially used containers by thoroughly tightening bungs. Damaged or leaking containers which contain product that cannot be used immediately should be transferred to suitable sound containers and properly marked. Absorb any spill with a suitable clay absorbent and dispose of as indicated under '**PESTICIDE DISPOSAL**'.

Keep containers closed when not in use. For safety and prevention of unauthorized use, all pesticides should be stored in locked facilities. To prevent accidental misuse, different pesticides should be stored in separate areas with enough distance between to provide clear identification. Opened, partially used pesticides should be stored in original containers when possible. When transfer to another container is necessary because of leakage or damage, carefully mark and identify contents of the new container.

**PESTICIDE DISPOSAL:** 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 of the nearest EPA Regional Office for guidance.

### **CONTAINER HANDLING:**

**Non-refillable containers (5 gallons or less):** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or 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.

**Non-refillable containers (greater than 5 gallons):** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  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 the container on its 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. Then offer for recycling if available, 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.

(continued)

## STORAGE AND DISPOSAL (continued)

**Returnable/Refillable Containers:** Refill this container with pesticide only. Do not reuse 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. 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 (specified by Willowood, LLC). 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 Willowood, LLC. To clean the container before final disposal, empty the remaining contents into application equipment or mix tank. Fill the container about 10% 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.

**IMPORTANT: READ BEFORE USE**  
**CONDITION 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 unopened product container at once. By using the product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, 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 weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Willowood, LLC. To the extent consistent with applicable law, such risks shall be assumed by the user or buyer.

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