



# ULV Mosquito Master 412

A Quick Knockdown Combination to Control Adult Mosquito Populations in Outdoor Residential and Recreational Areas.

Active Ingredients	
Chlorpyrifos	
[0,0-diethyl 0-(3,5,6,-trichloro 2-pyridyl) phosphorothioate .....	12.0%
*Permethrin	
(3-Phenoxyphenyl) methyl (±) cis, trans-3-(2,2-dichlorethenyl)-	
2,2-dimethyl-cyclopropanecarboxylate .....	4.0%
Other Ingredients .....	84.0%
	100.0%

\* Cis/trans isomer ratio: min. 35% (+) cis and max. 65% (+) trans

Contains petroleum distillate

The product density is 7.62 pounds per gallon, which contains active ingredients chlorpyrifos and permethrin at 0.9 and 0.3 pounds per gallon, respectively.

## KEEP OUT OF REACH OF CHILDREN CAUTION

### FIRST AID

**Have product container or label with you when calling a poison control center or doctor, or going for treatment. For Medical Emergencies, call the International Poison Control Center at 1-800-214-7753.**

<b>IF SWALLOWED:</b>	Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
<b>IF ON SKIN OR CLOTHING:</b>	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.
<b>IF IN EYES:</b>	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 the eye. Call a poison control center or doctor for treatment advice.
<b>IF INHALED:</b>	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth. Call a poison control center or doctor for further treatment advice.

**NOTE TO PHYSICIAN:** Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. Atropine is antidotal. 2-PAM may be effective as an adjunct to atropine. This product contains petroleum distillate. Vomiting may cause aspiration pneumonia.

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**Caution.** Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid breathing of mist. Do not contaminate food or feed products. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

**Personal Protective Equipment (PPE):** Mixers and loaders involved in ground application must wear coveralls over long-sleeved shirt and long pants, shoes plus socks, chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, and a minimum of a NIOSH approved filtering face piece respirator with any R or P filter (TC-84A). You can also use other NIOSH approved particulate respirators that offer more protection such as a half face or full face respirator with any filter or a powered air purifying respirator with an HE filter. Applicators

involved in ground ULV application must use an enclosed cab as described in the Engineering Controls section of this label and must wear long-sleeved shirt and long pants, shoes plus socks, and chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils. Aerial applicators and pilots must use an enclosed cockpit and wear long-sleeved shirt, long pants, shoes, and socks.

**Engineering Controls:** Ground applicators must use an enclosed cab that has a nonporous barrier that totally surrounds the occupants and prevents contact with pesticides outside the cab. Applicators must be provided and have immediately available for use in an emergency when they must exit the cab in the treated area: coveralls, chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, and a respirator of the type specified in the PPE section of this labeling. Take off any PPE that was worn in the treated area before reentering the cab and store all such PPE in a chemical-resistant container, such as a plastic bag, to prevent contamination of the inside of the cab.

Mixers and loaders involved in aerial application must use a closed system designed by the manufacturer to enclose the pesticide to prevent it from contacting handlers or other people and which is used and maintained in accordance with the manufacturer's written operating instructions. Mixers and loaders using a closed system must wear protective eyewear if the system operates under pressure, and must have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown coveralls, chemical-resistant gloves made of Barrier Laminate, Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils, chemical-resistant footwear, chemical-resistant apron and a respirator of the type specified in the PPE section of this labeling.

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

**USER SAFETY RECOMMENDATIONS:** Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should 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 extremely toxic to aquatic organisms including fish and aquatic invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates. Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist. Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes, or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or wash waters.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes, or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

## PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

## DIRECTIONS FOR USE

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

For use only by federal, state, tribal or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

Do not contaminate food or feed products. Do not allow spray treatment to drift onto cropland, poultry ranges or potable water supplies. Do not use on crops for food or forage. In treatment of corrals, feed lots, swine lots, and zoos, cover any exposed drinking water, drinking water fountains and animal feed before application.

Not for use in outdoor residential misting systems.

ULV MOSQUITO MASTER 412 is formulated for application as an ultra low volume (ULV) nonthermal aerosol (cold fog) to control adult mosquitoes in outdoor residential and recreational areas where these insects are a problem. For best results treat when mosquitoes are most active and weather conditions are conducive to keeping the spray cloud close to the ground. An inversion of air temperatures and a light breeze are preferable. Application in calm air conditions is to be avoided. Apply only when ground wind speed is greater than 1 mph. Air temperatures should be greater than 50 °F when conducting applications.

Do not treat a site with more than 0.01 lb. chlorpyrifos and 0.003 lb. permethrin per acre in a twenty-four hour period. Do not exceed 0.26 lb chlorpyrifos and 0.08 lb permethrin per acre per year. More frequent applications may be made to prevent or control a threat to public and/or animal health determined by a state, tribal, or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

### SPRAY DROPLET SIZE DETERMINATION

**Ground-based Application:** Spray equipment must be adjusted so that the volume median diameter (VMD) is between 8 and 30 microns ( $8 \leq D_v 0.5 \leq 30 \text{ um}$ ) and that 90% of the spray is contained in droplets smaller than 50 microns ( $D_v 0.9 < 50 \text{ um}$ ). Directions from the equipment manufacturer or vendor, pesticide registrant or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

### Aerial Application made at less than or equal to 200 feet above ground

**elevation:** Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns ( $D_v 0.5 < 60 \text{ um}$ ) and that 90% of the spray is contained in droplets smaller than 100 microns ( $D_v 0.9 < 100 \text{ um}$ ). The effects of flight speed and, for nonrotary nozzles, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

**Aerial Application made at > 200 feet above ground elevation:** Spray equipment must be adjusted so that the volume median diameter produced is less than 70 microns ( $D_v 0.5 < 70 \text{ um}$ ) and that 90% of the spray is contained in droplets smaller than 145 microns ( $D_v 0.9 < 145 \text{ um}$ ). The effects of flight speed and, for non-rotary nozzles, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

### GROUND ULV APPLICATION

Apply ULV MOSQUITO MASTER 412 through standard ULV cold aerosol or non-thermal aerosol (Cold Fog) generators undiluted at a flow rate of 4.5 to 8.6 fluid ounces per minute at an average vehicle speed of 10 mph. This is equivalent to 0.005 to 0.01 pounds of chlorpyrifos and 0.0017 to 0.003 pounds of permethrin per acre. If a different vehicle speed is used, adjust rate accordingly. An accurate flow meter must be used to ensure the proper flow rate. Vary flow rate according to vegetation

density and mosquito population. Use higher flow rate in heavy vegetation or when populations are high.

Pounds/Acre (Chlorpyrifos/Permethrin)	Application Rate (Fl. Oz./Minute)			Fl. oz. per acre
	5 MPH	10 MPH	15 MPH	
0.01 / 0.003	4.3	8.6	12.9	1.42
0.005 / 0.0017	2.25	4.5	6.75	0.74

For proper application, mount the applicator so that the nozzle is at least 4 ½ feet above ground level and directed out the back of the vehicle. Failure to follow the above directions may result in reduced effectiveness.

### AERIAL APPLICATION

ULV MOSQUITO MASTER 412 may be applied undiluted at rates up to 1.42 fluid ounces ULV MOSQUITO MASTER 412 per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment. Do not apply by fixed wing at a height less than 100 feet, or by helicopter at a height less than 75 feet unless specifically approved by the state or tribe based on public health needs.

**IN FLORIDA:** Aerial applications of this product require trained personnel to perform industry accepted assays to monitor resistance formation in targeted mosquitoes.

## STORAGE & DISPOSAL

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

**Pesticide Storage:** Store in a dry and cool place away from food and feed.

**Pesticide Disposal:** Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of according to applicable Federal, State or local guidelines.

**Container Handling:** Refillable container. 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. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a 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.

NOTICE: To the extent provided by law, seller makes no warranty, expressed or implied concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use and/or handling of this material when use and/or handling is contrary to label instructions.

**FOR MORE INFORMATION CALL: 1-800-323-5727**

IN CASE OF MEDICAL EMERGENCY, CALL THE INTERNATIONAL  
POISON CONTROL CENTER 1-800-214-7753

IN CASE OF TRANSPORTATION EMERGENCY, CALL INFO-TRAC 1-800-553-5053

Manufactured For:

**CLARKE MOSQUITO CONTROL PRODUCTS, INC.**  
159 N. GARDEN AVENUE  
ROSELLE, ILLINOIS 60172 U.S.A.

EPA Reg. No.: 8329-36

EPA Est. No: \_\_\_\_\_

Net Contents: [ ] 30 GAL [ ] 55 GAL [ ] 275 GAL

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AL0522