



## OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

WASHINGTON, D.C. 20460

November 24, 2023

Nandita Chowdhury  
Global Regulatory Manager  
Clarke Mosquito Control Products, Inc.  
675 Sidwell Court  
St. Charles, IL 60174

Subject: Label Amendment – Implementing Chlorpyrifos Biological Opinion (BiOp) Mitigation, Permethrin Interim Decision Mitigation, and General Label Updates  
Product Name: ULV Mosquito Master 412  
EPA Registration Number: 8329-36  
Application Dates: March 25, 2021 and October 11, 2022  
Decision Numbers: 572641 and 594607

Dear Nandita Chowdhury:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all of the information submitted with your application to support the Registration Review of the above referenced product in connection with the Chlorpyrifos 2022 Biological Opinion and has concluded that your submission 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. The next label printing of this product must use this labeling unless subsequent changes have been approved. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 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 FIFRA 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) lists 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 Briana Hanlon at (202) 566-2716 or at [hanlon.briana@epa.gov](mailto:hanlon.briana@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Walsh', is positioned above the typed name.

Michael Walsh  
Product Manager 11  
Invertebrate & Vertebrate Branch 2  
Registration Division  
Office of Pesticide Programs

<b>CHLORPYRIFOS</b>	<b>GROUP</b>	<b>1B</b>	<b>INSECTICIDE</b>
<b>PERMETHRIN</b>	<b>GROUP</b>	<b>3A</b>	<b>INSECTICIDE</b>

*[Italicized text in [] brackets denotes informative non-label text]*

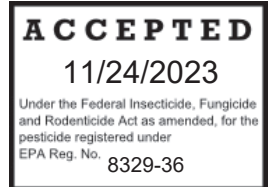
**ULV MOSQUITO MASTER 412**

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**

Manufactured By  
**CLARKE MOSQUITO CONTROL PRODUCTS, INC.**  
159 N. GARDEN AVENUE  
ROSELLE, ILLINOIS 60172



EPA Reg. No.: 8329-36  
EPA Est. No.: 8329-IL-01

NET CONTENTS: \_\_\_\_\_ GAL.  
LOT NO.: \_\_\_\_\_

<b>FIRST AID</b>	
<b>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>	
<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 <b>any</b> 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.
<b>NOTE TO PHYSICIAN:</b> 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, nitrile rubber  $\geq 14$  mils, or Viton  $\geq 14$  mils, and a minimum of a NIOSH-approved elastomeric half mask respirator with organic vapor (OV) cartridges and combination R or P filters, OR a NIOSH-approved gas mask with OV canisters; OR a NIOSH-approved powered air purifying respirator with OV cartridges and combination HE filters. 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. Aerial applicators and pilots must use an enclosed cockpit and wear long-sleeved shirt, long pants, shoes, and socks.

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, nitrile rubber  $\geq 14$  mils, or Viton  $\geq 14$  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.

**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, nitrile rubber  $\geq 14$  mils, or Viton  $\geq 14$  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. Aerial applicators and pilots must use an enclosed cockpit that meet the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

<p><b>USER SAFETY RECOMMENDATIONS:</b> 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.</p>
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## ENVIRONMENTAL HAZARDS

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.**

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.

### ENDANGERED SPECIES PROTECTION REQUIREMENTS

It is a Federal offense to use any pesticide in a manner that results in an unauthorized "take" (e.g., kill or otherwise harm) of an endangered species and certain threatened species under the Endangered Species Act section 9. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813, or email [ESPP@epa.gov](mailto:ESPP@epa.gov). You must use the Bulletin valid for the month in which you will apply the product.

Reporting Ecological Incidents: To report ecological incidents, including mortality, injury, or harm to plants and animals, call 1-800-323-5727.

### MANDATORY SPRAY DRIFT MANAGEMENT

#### Ultra Low Volume Applications

- Apply when ground wind speeds are equal to or greater than 1 mph.
- All types of applications should be conducted when temperatures at ground level are at or above 50°F.

For Ground Applications:

- Create an optimum swath when possible. An optimum swath width can be achieved when ULV MOSQUITO MASTER 412 is applied from a truck that is being driven perpendicular to the wind direction. Direct the spray head of equipment to ensure even distribution of the spray cloud throughout the area.
- FOR BEST RESULTS treat when mosquitoes or other labeled insects are most active and weather conditions are conducive to keeping the spray cloud in the air column close to the ground.
- An inversion of air temperatures and a light breeze is preferable. Application during the cooler hours of the night or early morning is recommended.

For Aerial Applications:

- Do not apply by fixed wing aircraft at a nozzle height less than 100 feet (30.5 m) above ground or canopy, or by helicopter at a height less than 75 feet (22.9 m) above the ground or canopy, unless specifically approved by the state or tribe based on public health needs.

Adult mosquito control applications should be limited to trained personnel.

- 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 supervision, or as allowed by state regulations for persons treating private property.
- This pesticide is extremely toxic to aquatic organisms. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to aquatic organisms.
- 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 beyond the body of water to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or wash waters.
- 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 treat a site with more than 0.01 lbs chlorpyrifos and 0.003 lbs permethrin per acre in a single application or in any 24-hour period. Do not exceed 0.26 lbs chlorpyrifos or 0.08 lbs permethrin per acre in any site in one 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.

### **Insecticide Resistance Management (IRM) Recommendations**

For resistance management, ULV MOSQUITO MASTER 412 contains both a Group 1B and Group 3A insecticide. Any insect population may contain individuals naturally resistant to Group 1B or Group 3A insecticides. In insect populations expressing resistance to **both** Group 1B and Group 3A insecticides, the resistant individuals may dominate the insect population if these groups of insecticides are used repeatedly alone or in combination in the same area. Appropriate resistance-management strategies should be followed.

To delay insecticide resistance, take the following steps:

- Adopt an integrated pest management program for insecticide use that includes surveillance, uses historical information related to pesticide use, record keeping, and which considers biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, contact your local university specialist or Clarke representative.
- Contact your local extension specialist, technical advisor, and/or Clarke representative for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problem in your area.
- For further information or to report suspected resistance, contact your local Clarke representative by calling 1-800-323-5727.

### **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 ( $8 \leq D_v \leq 30 \text{ um}$ ) and that 90% of the spray is contained in droplets smaller than 50 microns ( $D_v < 50 \text{ um}$ ). 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 ( $D_v < 60 \text{ um}$ ) and that 90% of the spray is contained in droplets smaller than 100 microns ( $D_v < 100 \text{ um}$ ). 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.

**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 ( $D_v < 70 \text{ um}$ ) and that 90% of the spray is contained in droplets smaller than 145 microns ( $D_v < 145 \text{ um}$ ). 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.

**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.

*[Only one of the following two container handling instructions will appear on the label depending on container type.]*

*[Storage & Disposal for rigid, non-refillable containers with capacities greater than 5 gallons]*

**Container Handling:** Nonrefillable container. Do not reuse this container. Triple rinse (or equivalent), 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.

*[Storage & Disposal for rigid, refillable containers with capacities greater than 5 gallons]*

**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.

IN CASE OF MEDICAL EMERGENCY,  
CALL THE INTERNATIONAL POISON CONTROL CENTER  
1-800-214-7753  
IN CASE OF TRANSPORTATION EMERGENCY,  
CALL INFO-TRAC 1-800-535-5053

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

NOTICE: To the extent consistent with applicable 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.