



U.S. ENVIRONMENTAL PROTECTION AGENCY  
 Office of Pesticide Programs  
 Registration Division (7505P)  
 1200 Pennsylvania Ave., N.W.  
 Washington, D.C. 20460

EPA Reg. Number:

8329-109

Date of Issuance:

1/10/18

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
 (under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

Clarke DUET Dual-Action  
 Adulicide

Name and Address of Registrant (include ZIP Code):

Jonathan Ostrowski  
 Regulatory Manager  
 Clarke Mosquito Control Products, Inc.  
 675 Sidwell Ct.  
 St. Charles, IL 60174

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A). You must comply with the following conditions:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product under FIFRA when the Agency requires all registrants of similar products to submit such data.

Signature of Approving Official:

Kable Bo Davis, Product Manager 03  
 Invertebrate & Vertebrate Branch 1, Registration Division (7505P)

Date:

1/10/18

2. You are required to comply with the data requirements described in the DCIs, PDCIs, and EDSP Orders identified below:

- |                       |   |
|-----------------------|---|
| a. Phenothrin         | GDCI-069005-1285<br>PDCI-069005-28163   |
| b. Piperonyl Butoxide | GDCI-067501-1063<br>EDSP-067501-100<br>EDSP-067501-95<br>EDSP-067501-96<br>EDSP-067501-99 |
| c. Prallethrin        | GDCI-128722-1109<br>GDCI-128722-1244  |

You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCIs or EDSP Orders listed above, you may contact the Chemical Review Manager in the Pesticide Reevaluation Division: <http://www.epa.gov/pesticide-contacts/contacts-office-pesticide-programs-pesticide-re-evaluation-division>

3. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, “EPA Reg. No. 8329-109.”
4. Submit one copy of the final printed label for the record before you release the product for shipment.

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

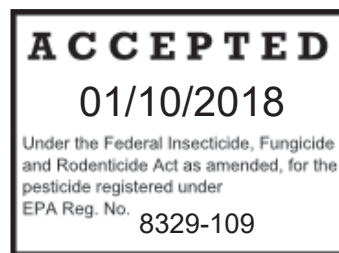
If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 09/15/2017
- Alternate CSF 1 dated 09/15/2017

If you have any questions, please contact Tim Ciarlo by phone at 703-347-8082, or via email at [Ciarlo.Timothy@epa.gov](mailto:Ciarlo.Timothy@epa.gov).

Enclosure

Text in [brackets] denotes optional language

**CLARKE DUET® Dual-Action Adulticide****[Alternate Brand Name(s): DUET® Dual-Action Adulticide]**

[A Quick Knockdown, Oil Soluble Synergized Synthetic Pyrethroid for Effective Control of Adult MOSQUITOES, GNATS, BITING AND NON-BITING MIDGES and BLACK FLIES in Outdoor Residential and Recreational Areas.]

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.

**ACTIVE INGREDIENTS:**

<b>Prallethrin:</b> (RS)-2-methyl-4-oxo-3-(2-propynyl) cyclopent-2-enyl-(1RS)-cis, trans-chrysanthemate .....	1.00%
<b>Sumithrin®:</b> 3-Phenoxybenzyl-(1RS, 3RS, 1RS, 3SR) -2,2-dimethyl-3-(2-methylprop-1-enyl) Cyclopropanecarboxylate .....	5.00%
<b>*Piperonyl Butoxide</b> .....	5.00%
<b>**OTHER INGREDIENTS</b> .....	<u>89.00%</u>
	100.00%

Contains 0.0717 lb. of Prallethrin/Gallon, 0.359 lb. of Sumithrin®/Gallon and 0.359 lb. of [Piperonyl Butoxide] [PBO]/Gallon.

\* (butylcarbityl) (6-propylpiperonyl) ether and related compounds

\*\*Contains petroleum distillate

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

<b>FIRST AID</b>	
If Swallowed:	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
NOTE TO PHYSICIAN: Contains petroleum distillate – vomiting may cause aspiration pneumonia.	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.	

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

CAUTION. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

**Personal Protective Equipment (PPE):** Mixers, loaders, applicators, and other handlers must wear long-sleeved shirt, long pants, shoes and socks. See engineering controls for additional requirements.

**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 material that have been drenched or heavily contaminated with the 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. If worn, wash the outside of gloves before removing. As soon as possible, wash thoroughly and change clothing.

**Engineering Controls:** Pilots must use an enclosed cockpit that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(6)]. Human flagging is prohibited. Flagging to support aerial applications is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

**ENVIRONMENTAL HAZARDS**

This pesticide is highly 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 to or allow drift onto blooming crops or weeds when bees are foraging 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.**

#### **USE RESTRICTIONS**

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.

IN CALIFORNIA: This product is to be applied by County Health Department, State Department of Health Services, Mosquito and Vector Control or Mosquito Abatement District personnel only.

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

Do not treat a site with more than 0.0036 lb of each a.i., Sumithrin and piperonyl butoxide and 0.00072 lbs. prallethrin per acre in a single application or in any 24-hour period. Do not apply more than 0.0108 lb. each of Sumithrin and piperonyl butoxide and 0.0022 lb prallethrin to the same treatment area in a 7 day period. Do not apply more than 0.0216 lb. each of Sumithrin and piperonyl butoxide and 0.0043 lb. prallethrin to the same treatment area in 1 month. Do not exceed 0.1 lb. of Sumithrin or piperonyl butoxide or 0.02 lb. prallethrin 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.

NOTE: When rotating products with other insecticides containing piperonyl butoxide, do not exceed 2 lbs PBO per acre per year.

Not for use in outdoor residential misting systems. Not for use in metered release systems. CLARKE DUET® Dual-Action Adulticide cannot be diluted with water. Dilute this product with light mineral oil if dilution is preferred.

#### **USE INFORMATION**

CLARKE DUET® Dual-Action Adulticide is approved for application as a thermal aerosol and as an Ultra Low Volume (ULV) nonthermal aerosol (cold fog) in mosquito adulticiding programs involving outdoor residential, urban, industrial, and recreational areas where adult mosquitoes are present in annoying numbers, and in vegetation surrounding parks, woodlands, swamps, marshes, overgrown areas and golf courses.

CLARKE DUET® Dual-Action Adulticide may be applied over crops or to areas favoring drift over crops, including row, tree, fruit, citrus, pasture and other areas where agricultural enterprises take place.

### **SPRAY DROPLET SIZE DETERMINATION**

**Ground-based, wide area mosquito abatement application:** Spray equipment must be adjusted so that the volume median diameter (VMD) is less than 30 microns ( $D_v 0.5 < 30 \text{ um}$ ) 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 Equipment, wide area mosquito abatement application:** 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 115 microns ( $D_v 0.9 < 115 \text{ um}$ ). The effects of flight speed and, for non-rotary atomizers, 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**

To control Mosquitoes and other listed insects, apply CLARKE DUET® Dual-Action Adulticide at a flow rate of 2.6 to 7.8 fluid ounces per minute at an average vehicle speed of 10 MPH using a swath width of 300 feet for acreage calculations (see chart below). For best results, apply when mosquitoes are most active and meteorological conditions are conducive to keeping the spray cloud close to the ground. Certain mosquito species, such as *Aedes aegypti* and *Aedes albopictus*, are most active during the day. Application in calm air conditions is to be avoided. Apply only when ground wind speed is greater than or equal to 1 mph. All types of applications should be conducted at temperatures above 50°F. Under normal residential conditions a flow rate of 4.8 fluid ounces per minute is recommended at an average vehicle speed of 10 MPH. If a different vehicle speed is used, adjust rate accordingly. These rates are equivalent to 0.00024 to 0.00072 lb. of Prallethrin and 0.0012 to 0.0036 lb. of Sumithrin® and Piperonyl Butoxide per acre. Vary flow rate according to vegetation density and mosquito population. Use higher flow rate in heavy vegetation or when populations are high. CLARKE DUET® Dual-Action Adulticide may also be diluted with a suitable solvent such as mineral oil and applied by GROUND ULV

equipment so long as 1.28 fluid ounces per acre of CLARKE DUET® Dual-Action Adulticide is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of CLARKE DUET® Dual-Action Adulticide.

Use the [following table][table below][table on the following panel] to calculate application rates:]

lb. a.i./Acre			Clarke Duet® Dual-Action Adulticide Fl. Oz./Acre	Flow Rates (Fl.oz./Minute) at vehicle speeds of:			
Prallethrin	Sumithrin®	PBO		5 MPH	10 MPH	15MPH	20MPH
0.00072	0.0036	0.0036	1.28	3.9	7.8	11.7	15.6
0.00044	0.0022	0.0022	0.79	2.4	4.8	7.1	9.5
0.00036	0.0018	0.0018	0.64	1.9	3.9	5.8	7.8
0.00024	0.0012	0.0012	0.43	1.3	2.6	3.9	5.2

CLARKE DUET® Dual-Action Adulticide may be applied through truck mounted thermal fogging equipment. Do not exceed the maximum rates listed above. May be applied at speeds of 5 to 20 MPH. To reduce oil requirement and sludge buildup in equipment, use a 60 - 100-second viscosity mineral “fog” oil or other fuel-type oil. Use a clean, well-maintained and properly calibrated fogger. Do not wet foliage since oil base formulations may be phytotoxic.

**Urban ULV Mosquito Control:** CLARKE DUET® Dual-Action Adulticide may be applied for control of resting or flying adult mosquitoes in urban and industrial areas such as utility tunnels, pipe chases, underground basements, underground passages, parking decks, open parking garages, abandoned warehouses, crawl spaces, uninhabited buildings, rail yards, waste yards, junkyards, tire dumps, and other areas where adult mosquitoes may be found. Apply using mechanical-foggers, or truck-mounted ULV equipment, or other spray equipment suitable for this application. Apply at rates up to but not exceeding 0.0036 lb. of each a.i., Sumithrin and piperonyl butoxide and 0.00072 lb. prallethrin per acre in a single application or in any 24-hour period.

#### **AERIAL APPLICATION**

CLARKE DUET® Dual-Action Adulticide may be applied at rates of 0.43 to 1.28 fluid ounces of CLARKE DUET® Dual-Action Adulticide per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment. Appropriate spray systems include rotary atomizers, flat fan, high pressure, and high pressure impaction nozzles characterized and oriented to achieve the droplet characteristics specified in this label.

CLARKE DUET® Dual-Action Adulticide may also be diluted with a suitable solvent such as mineral oil and applied by aerial ULV equipment so long as 1.28 fluid ounces per acre of CLARKE DUET® Dual-Action Adulticide is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of CLARKE DUET® Dual-Action Adulticide.



Do not apply by fixed wing aircraft at a height less than 100 feet above the ground or canopy, or by helicopter at a height less than 75 feet above the ground or canopy unless specifically approved by the state or tribe based on public health needs. When making aerial application at an altitude of less than 100 feet, apply only when wind speed at altitude is greater than or equal to 5 MPH. When making application at an altitude of 100 feet or greater, apply only when wind speed at altitude is greater than or equal to 3 MPH.

### Dilution Calculations

For a 4% Sumithrin product, dilute 1 gallon CLARKE DUET® Dual-Action Adulticide with 0.25 gallon oil. Finished spray contains 0.29 lb. Sumithrin & PBO and 0.06 lb. Prallethrin per gallon.

Dosage Description	lb. a.i. /Acre			Fluid oz. Finished Spray/ Acre	Flow Rates in fl. oz./minute at truck speeds of:			
	Prallethrin	Sumithrin	PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	0.0036	1.61	4.9	9.7	14.6	19.5
Recommended	0.00044	0.0022	0.0022	0.98	3.0	5.9	8.9	11.9
Light Population	0.00036	0.0018	0.0018	0.80	2.4	4.9	7.3	9.7
	0.00024	0.0012	0.0012	0.54	1.6	3.2	4.9	6.5

For a 2.5% Sumithrin product, dilute 1 gallon CLARKE DUET® Dual-Action Adulticide with 1 gallon oil. Finished spray contains 0.179 lb. Sumithrin & PBO and 0.036 lb. Prallethrin per gallon.

Dosage Description	lb. a.i. /Acre			Fluid oz. Finished Spray/ Acre	Flow Rates in fl. oz./minute at truck speeds of:			
	Prallethrin	Sumithrin	PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	0.0036	2.57	7.8	15.6	23.4	31.1
Recommended	0.00044	0.0022	0.0022	1.57	4.8	9.5	14.3	19.0
Light Population	0.00036	0.0018	0.0018	1.28	3.9	7.8	11.7	15.6
	0.00024	0.0012	0.0012	0.86	2.6	5.2	7.8	10.4

For a 2% Sumithrin product, dilute 1 gallon CLARKE DUET® Dual-Action Adulticide with 1.5 gallons oil. Finished spray contains 0.143 lb. Sumithrin & PBO and 0.029 lb. Prallethrin per gallon.

Dosage Description	Lb. a.i. /Acre			Fluid oz. Finished Spray/ Acre	Flow Rates in fl. oz./minute at truck speeds of:			
	Prallethrin	Sumithrin	PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	0.0036	3.21	9.7	19.5	29.2	38.9
Recommended	0.00044	0.0022	0.0022	1.96	5.9	11.9	17.8	23.8
Light Population	0.00036	0.0018	0.0018	1.61	4.9	9.7	14.6	19.5
	0.00024	0.0012	0.0012	1.07	3.2	6.5	9.7	13.0



## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in a cool, dry place. Keep container closed.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### **CONTAINER HANDLING:**

*[For Nonrefillable containers of 5 gallons or less]* [Nonrefillable container. 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 mineral oil and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse 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. 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.]

*[For Nonrefillable containers over 5 gallons:]* [Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into the application equipment or a mix tank. Fill the container  $\frac{1}{4}$  full with mineral oil. 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. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.] 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.]

*[For Refillable Containers]* [Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into rinsate collection system. Repeat this rinsing procedure two more times. 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.]

**[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]**

[NOTICE: To the extent consistent with applicable law, [seller] [Clarke Mosquito Control Products, Inc.] makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. To the extent consistent with applicable law, Buyer assumes all risk of use/handling of this material when use and/or handling is contrary to label instructions.]

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

EPA Reg. No.: 8329-XXX

EPA Est. No.:

NET CONTENTS: \_\_\_\_\_

LOT NO.: \_\_\_\_\_

[DATE OF MANUFACTURE: ]

[Sumithrin® - Trademark of Sumitomo Company Ltd.]

[Duet® - Registered Trademark of Clarke Mosquito Control Products, Inc.]