



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

August 23, 2023

Anna Hale  
Registration Manager  
Drexel Chemical Company  
P.O. Box 13327  
Memphis, TN 38113-0327

Subject: Registration Review Label Amendments Incorporating Mitigation from the Fish and Wildlife Services (FWS) and the National Marine Fisheries Services (NMFS) Biological Opinions on the Effects of Malathion on Endangered and Threatened Species and Designated Critical Habitat  
*Product Name:* Drexel Malathion ULV 96.5%  
*EPA Registration Number:* 19713-540  
*Application Dates:* 4/29/2022 and 7/25/2022  
*Decision Numbers:* 584321 and 589937

Dear Anna Hale:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the FWS and NMFS' Biological Opinions on the effects of malathion on federally listed endangered and threatened species and designated critical habitat in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). The Agency has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

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.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40

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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.

If you have any questions, please contact Carolyn Smith by phone at (202) 566-2273 or via email at [smith.carolyn@epa.gov](mailto:smith.carolyn@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Kelly Sherman", with a long horizontal flourish extending to the right.

Kelly Sherman  
Chief, Risk Management Implementation Branch 3  
Pesticide Re-evaluation Division  
Office of Pesticide Programs

Enclosure

**ACCEPTED**  
**08/23/2023**  
 Under the Federal Insecticide, Fungicide  
 and Rodenticide Act as amended, for the  
 pesticide registered under  
 EPA Reg. No. 19713-540

MALATHION	GROUP	<b>1B</b>	INSECTICIDE
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***Malathion ULV 96.5%***  
 Ultra Low Volume Concentrate Insecticide

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 INGREDIENT:**  
 Malathion\* ..... 96.5%

**OTHER INGREDIENTS:** ..... 3.5%

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

\* O,O-dimethyl phosphorodithioate of diethyl mercaptosuccinate.  
 This product contains 9.9 lbs. of malathion per gallon.

**Not for sale or use after [insert date 1 year from the date of production].**

**KEEP OUT OF REACH OF CHILDREN  
 CAUTION**

**See FIRST AID Below**

EPA Reg. No. 19713-540  
 EPA Est. No. 19713-XX-XXX

Net Content: \_\_\_\_\_

<b>FIRST AID</b>
This product is an organophosphate and is a cholinesterase inhibitor.
<b>IF ON SKIN OR CLOTHING:</b> <ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information on this pesticide product (including health concerns, medical emergencies or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.
<b>Note to Physician:</b> This product is cholinesterase inhibitor. Treat symptomatically. Atropine is antidotal.

Manufactured For:



540SP-0414\*

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

**CAUTION:** Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

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

Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber, nitrile rubber, and viton. If you want more options, refer to Category F on EPA chemical-resistance category selection chart.

### **Mixers, loaders, flaggers, and applicators/handlers must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves (except for applicators using motorized equipment, e.g., pilots, truck drivers)

### **USER SAFETY REQUIREMENTS**

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions 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:** 1) Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. 2) Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 3) 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 pesticide is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Use care when applying in or to an area which is adjacent to any body of water, and do not apply when weather conditions favor drift from target area. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. Reporting Ecological Incidents: To report ecological incidents, including mortality, injury, or harm to plants and animals, call (901) 774-4370.

When applying as a wide area mosquito adulticide, before making the first application in a season, it is advisable to consult with the State or Tribal agency charged with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply or allow to drift onto 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 public 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. When applying as a wide area mosquito adulticide, 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 discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

### **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 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.

### **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 (901) 774-4370.

See separate directions and precautions for mosquito control applications.

To minimize hazard to bees, do not apply this product more than two hours after sunrise or more than two hours before sunset. This timing restriction prohibits applications when bees are most active (mid-day). This restriction does not apply when applications are made as a spot treatment or to prevent or control a threat to public and/or animal health determined by a state, tribal or local public 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 and human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

Calibrate and inspect nozzles at least once a year to ensure they are in good working condition.

### **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 this product 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 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 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 mosquitos 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, consult with the state or tribal Agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.
- Treatment of a site must be based on surveillance results. Do not treat any site with malathion more than 1 time per day. Do not apply more than 0.23 lbs ai/acre of this product per day by air or 0.06 lbs ai/acre per day by ground within any 24-hour period. Do not treat any site with more than 0.46 lb ai/acre within a 7 day period and the amount of undiluted product applied to any site must not exceed 5.75 lbs ai/acre per year. More frequent treatments 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 effort.

## RESISTANCE MANAGEMENT RECOMMENDATIONS

MALATHION	GROUP	1B	INSECTICIDE
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For resistance management, MALATHION ULV 96.5% contains a Group 1B insecticide or acaricide. Any insect/mite population may contain individuals naturally resistant to this product and other Group 1B insecticides/acaricides. The resistant individuals may dominate the insect/mite population if this group of insecticides/acaricides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

To delay insecticide/acaricide resistance, take the following steps:

- Rotate the use of this product or other Group 1B insecticides/acaricides within a growing season, or among growing seasons, with different groups that control the same pests.
- Use tank mixtures with insecticides/acaricides from a different group that are equally effective on the target pest when such use is permitted. Do not rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues for the targeted pests between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):

- Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
- Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
- When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pest(s).
- Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
- The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an insect resistance management benefit only for the period where both insecticides are active.
- Adopt an integrated pest management program for insecticides/acaricides use that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which considers cultural, biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact Drexel Chemical Company at 1-901-774-4370.

## **MOSQUITO CONTROL IN POPULATED AND RURAL AREAS**

### **PRECAUTIONS AND RESTRICTIONS**

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.

#### **Restrictions:**

- Do not apply more than 0.23 pound a.i. per acre per day.
- Only treat when mosquitoes are swarming or biting. Do not retreat a site more than 3 times in any one week. However, more frequent treatments 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 diseases in animal or human populations, or if specifically approved by the State or Tribe during a natural disaster effort.
- Apply when wind speed is greater than or equal to 1 mph.
- Do not apply by fixed wing aircraft at 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.

#### **Precautions:**

- **IMPORTANT:** IN AREAS WHERE AUTOMOBILES, TRAILERS, TRUCKS AND PLEASURE BOATS ARE PRESENT, undiluted spray droplets of this product will permanently damage vehicle paint finishes unless the aircraft used for the ultra low volume application meets all of the specifications listed under *AERIAL APPLICATION*.

### **AERIAL APPLICATION**

#### **Adult Mosquitoes on Rangeland, Pasture, and Other Uncultivated Non-Agricultural Areas (Wastelands, Roadsides):**

Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns ( $Dv\ 0.5 < 60\ \mu m$ ) and that 90% of the spray is contained in droplets smaller than 100 microns ( $Dv\ 0.9 < 100\ \mu m$ ). 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.

**Adult mosquito control over cities, towns, and other areas where automobiles, trailers, trucks, and pleasure boats are present:**

Apply 2.6 to 3.0 fluid ounces of this product per acre. Apply only when weather conditions are favorable. Wind and rising air currents may cause undesirable spray drift and reduce insect control. See "Precautions and Restrictions" for additional instructions.

**BUFFER ZONES FOR AERIAL APPLICATION**

Do not apply within 100 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, wetlands, ponds, estuaries, and commercial fish ponds). This 100-foot buffer is in addition to the full swath displacement upwind that applicators must use at the downwind edge of the field. Applications made by mosquito control districts and other public health officials are exempt from this requirement.

**GROUND-BASED APPLICATION**

Spray equipment must be adjusted so that the volume median diameter is less than 30 microns (Dv 0.3 < 30 um) and that 90% of the spray is contained in droplets smaller than 50 microns (Dv 0.9 < 50 um). Directions from the equipment manufacturer or vendor, pesticide registrant or test facility using 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. Do not apply within 50 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, wetlands, ponds, estuaries, and commercial fish ponds). This 50-foot buffer is in addition to the full swath displacement upwind that applicators must use at the downwind edge of the field. Applications made by mosquito control districts and other public health officials are exempt from this requirement.

**Thermal Aerosols or Fogs**

For control of adult mosquitoes with thermal aerosols or fogs: Apply this product at the rate of 3.9 to 5.2 gallons of this product in 100 gallons of finished solution by ground equipment delivering 40 gallons per hour at a vehicle speed of 5 miles per hour to treat a swath width of 300 feet (equivalent to 180 acres per hour). At 3.9 gallons of this product per 100 gallons of finished solution, this is equivalent to 0.08 pounds active per acre. At 5.2 gallons per 100 gallons of finished solution, this is equivalent to 0.11 pound active per acre.

**Non-thermal Aerosols**

Adult Mosquito Control - Control of adult mosquitoes over a 300-foot swath can be obtained with non-thermal aerosols of this product using the following rates at the indicated vehicle speeds:

Rates for This Product					
Undiluted					
Apply As Follows:					
Pounds A.I. per Acre per Day	Application Rates Fluid Ounces per Minute at Vehicle Speed				Fluid Ounces of This Product per Acre
	5 mph	10 mph	15 mph	20 mph	
0.03 to 0.06*	1.0 to 2.1	2.0 to 4.3	3.0 to 6.3	4.0 to 8.6	0.38 to 0.75

\*Use higher rate of application when vegetation is dense and/or mosquito populations are heavy.

**OPERATING EQUIPMENT**

Each non-thermal aerosol generator used for dispersal of this product to control adult mosquitoes must have minimum capability of producing the droplet spectrum described under *GROUND BASED APPLICATION*. The initial determination of droplet size is made after the unit is installed in a vehicle and prior to its use in mosquito control operations. Recheck the unit frequently to insure that proper droplet size is maintained for each operation. Determination of droplet size every two months is usually sufficient if the unit has been maintained in good operating condition. Equipment manufacturer's instructions setting forth cleaning and maintenance of the unit must be followed. The unit must be inspected before each operation to correct any leaks or obstructions in the spray system; to detect whether the nozzle, hoses, or other parts are worn and need replacement; to insure that the flow meter is properly calibrated and to determine that the pressure recommended by the manufacturer is being maintained.

Flow Rate - Must be regulated by accurate flow meter



Nozzle Direction	- Not greater than 1 gallon per hour at 5 mph; 2 gallons per hour at 10 mph; 3 gallons per hour at 15 mph, or 4 gallons per hour at 20 mph
Vehicle Speed	- Rear of the vehicle - Upward at an angle of 45° or more - Not greater than 20 mph - Shut off spray equipment when vehicle is stopped

**IMPORTANT:** Spray droplets of undiluted form of this product will permanently damage automobile paint unless all the conditions described and recommended in this label are met. If accidental exposure does occur, the vehicle should be washed at once.

### STORAGE AND DISPOSAL

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

**STORAGE:** This product should be stored in the original unopened container in a secure, dry place. Do not contaminate with other pesticides or fertilizers. This product should never be heated above 55°C (131°F), and should not be stored for long periods of time at a temperature in excess of 25°C (77°F).

**PESTICIDE DISPOSAL:** To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by State or local governments or by industry).

**CONTAINER HANDLING:**

**Nonrefillable Container (rigid material; less than 5 gallons):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. 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 one-fourth 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. Dispose of empty container in a sanitary landfill or by incineration.

**Nonrefillable Container (rigid material; 5 gallons up to <250 gallons):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. 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 one-fourth 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. 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. Dispose of empty container in a sanitary landfill or by incineration.

**Refillable Container (≥ 250 gallons & Bulk):** 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 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.

### WARRANTY—CONDITIONS OF SALE

OUR DIRECTIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended and other influencing factors in the use of this product are beyond the control of the Seller. To the extent consistent with applicable law, Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith. To the extent consistent with applicable law, in no case shall the Manufacturer or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with directions given herewith. The foregoing is a condition of sale by the Seller and is accepted as such by the Buyer.

The Drexel logo is a registered trademark of Drexel Chemical Company.