

66330-219

02/12/2009

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mr. Bill Washburn
Regulatory Manager Arysta LifeScience North America, LLC
15401 Weston Parkway, Suite 150
Cary, NC 27513

FEB 12 2009

Subject: Label Notification(s) for Pesticide Registration Notice 2007-4
Stored Grain Dust M-1
EPA Reg. No. 66330-213
Malathion ULV
EPA Reg. No. 66330-219 ✓
Notification Applications Dated January 27, 2009
Malathion 25WP
Reg. No. 66330-212
Application Dated January 26, 2009

Dear Mr. Washburn:

The Agency is in receipt of your subject Applications for Pesticide Notification under Pesticide Registration Notices (PRN) 2007-4 and 98-10 for the subject products.

The Registration Division (RD) has conducted a review of this request for applicability under PRN-2007-4 and PRN 98-10 and finds that the label changes requested fall within the scope of these PR Notices. The labels have been date-stamped "Notification" and will be placed in our records.

Please be reminded that 40 CFR Part 156.140(a)(4) requires that a batch code, lot number, or other code identifying the batch of the pesticide distributed and sold be placed on nonrefillable containers. The code may appear either on the label (and can be added by non-notification/PR Notice 98-10) or durably marked on the container itself.

Sincerely,

A handwritten signature in cursive script, appearing to read "Marilyn A. Mautz".

Marilyn A. Mautz
Biologist
Insecticide-Rodenticide Branch
Registration Division (7504P)

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Please read instructions on reverse before completing form.

Form Approved, OMB No. 2070-0060, Approval expires 05-31-98

 EPA United States Environmental Protection Agency Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other:	OPP Identifier Number
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Application for Pesticide - Section I

1. Company/Product Number 66330-219	2. EPA Product Manager Venus Eagle	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) MALATHION ULV	PM# 1	
5. Name and Address of Applicant (Include ZIP Code) Arysta LifeScience North America, LLC 15401 Weston Parkway, Suite 150 Cary, NC 27513 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(I), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below. <input type="checkbox"/> Resubmission in response to Agency letter dated _____ <input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____ <input type="checkbox"/> "Me Too" Application <input type="checkbox"/> Other - Explain below
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Explanation: Use additional page(s) if necessary. (For Section I and Section II.)

Notification of label change per PR Notice 2007-4. This notification is consistent with guidance in PR Notice 2007-4 and the requirements of EPA's regulations at 40 CFR §§ 156.10, 156.140, 156.144, 156.146, and 156.156. No other changes have been made to the labeling or the Confidential Statement of Formula for this product. I understand that it is a violation of 18 USC Sec 1001 to willfully make any false statement to EPA. I further understand that if the amendment is not consistent with the requirements of 40 CFR §§ 156.10, 156.140, 156.144, 156.146, and 156.156, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Notification of label change per PR Notice 98-10. This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 USC Sec 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:			
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes" Unit Packaging wgt. No. per container	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes" Package wgt. No. per container	2. Type of Container <input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify)
*Certification must be submitted			
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container	4. Size(s) Retail Container <p style="text-align: center;">1.0 gal., 2.5 gal, 5.0 gal</p>	5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application)		
Name <p style="text-align: center;">Bill Washburn</p>	Title <p style="text-align: center;">Regulatory Manager</p>	Telephone No. (Include Area Code) <p style="text-align: center;">901-432-5118</p>
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete, acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature <p style="text-align: center;"><i>Bill Washburn</i></p>	3. Title <p style="text-align: center;">Regulatory Manager</p>	
4. Typed Name <p style="text-align: center;">Bill Washburn</p>	5. Date <p style="text-align: center;">01/27/09</p>	



January 27, 2009

Ms. Venus Eagle, PM 1
Document Processing Desk (NOTIF)
Office of Pesticide Programs – 7504P
U.S. Environmental Protection Agency
One Potomac Yard, Room S-4900
2777 South Crystal Drive
Arlington, VA 22202

**Subject: MALATHION ULV
EPA Reg. No. 66330-219**

***Notification of Label Change per PR Notice 2007-4
and PR Notice 98-10***

Dear Ms. Eagle:

Please find the following enclosed:

- Application for Pesticide Registration (Other) dated 01/27/09.
- One highlighted copy of subject label, showing all changes.
- One clean copy of the subject label.

Notification of label change per PR Notice 2007-4. This notification is consistent with guidance in PR Notice 2007-4 and the requirements of EPA's regulations at 40 CFR §§ 156.10, 156.140, 156.144, 156.146, and 156.156. No other changes have been made to the labeling or the Confidential Statement of Formula for this product. I understand that it is a violation of 18 USC Sec 1001 to willfully make any false statement to EPA. I further understand that if the amendment is not consistent with the requirements of 40 CFR §§ 156.10, 156.140, 156.144, 156.146, and 156.156, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Also in this submission, we are using PR Notice 98-10 to update the name of the company, emergency telephone numbers and warranty. Arysta LifeScience North America Corporation was changed to Arysta LifeScience North America, LLC.

Please acknowledge acceptance of this notification by stamping the extra copy of this letter and returning in the enclosed self-addressed stamped envelope. Should you have any questions or comments, please do not hesitate to contact me at 901-432-5118 or by e-mail at bill.washburn@arystalifescience.com

Sincerely,

Bill Washburn
Regulatory Manager

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MALATHION ULV

NOTIFICATION

FEB 12 2009

ACTIVE INGREDIENT:

Malathion (0,0-dimethyl phosphorodithioate of diethyl mercaptosuccinate 95.00%

INERT INGREDIENTS: 5.00%

TOTAL 100.00%

(1 gallon contains 9.79 pounds of Malathion)

KEEP OUT OF REACH OF CHILDREN

CAUTION

See [Side] [Back] Panel For Additional Precautions

Harmful By Swallowing, Inhalation or Skin Contact

AVOID BREATHING SPRAY MIST - AVOID CONTACT WITH SKIN - WASH THOROUGHLY AFTER HANDLING - CHANGE CONTAMINATED CLOTHING - DO NOT CONTAMINATE FOOD OR FEED PRODUCTS

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la haya sido explicada ampliamente.

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF INHALED:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	<ul style="list-style-type: none"> • 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 eye. • Call a poison control center or doctor for treatment advice.
NOTE TO PHYSICIAN	
This material is a cholinesterase inhibitor. Treat symptomatically. Atropine is an antidote.	
EMERGENCY TELEPHONE NUMBERS: Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
FOR 24- HOUR EMERGENCY MEDICAL ASSISTANCE CALL: 1-866-303-6952	
FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300	

EPA Reg. No. 66330-219
AD 092105

EPA Est. No. 51036-GA-1

Manufactured For:
Arysta LifeScience North America, LLC
15401 Weston Parkway, Suite 150
Cary, NC 27513

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PRECAUTIONARY STATEMENTS
Hazards To Humans And Domestic Animals

CAUTION

Harmful if swallowed, inhaled, or absorbed through the skin. Avoid breathing dust or spray. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

1. Long-sleeved shirt and long pants
2. Waterproof gloves
3. Shoes plus socks
4. Chemical-resistant headgear for overhead exposure

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing 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, aquatic invertebrates, and aquatic life stages of amphibians. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. For Aquatic Uses: Do not apply directly to water except as specified on this label. Drift and runoff may be hazardous to aquatic organisms in areas near the application site. Do not contaminate water when disposing of equipment washwaters. 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 if bees are visiting the treatment area.

PHYSICAL OR CHEMICAL HAZARDS

Before using read the directions contained on this label for the proper methods and procedures which must be followed to achieve effective insect control and avoid permanent damage to automobile and other paint finishes.

DIRECTIONS FOR USE

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

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated such as plants, soil, or water, is:

1. Coveralls
2. Waterproof gloves
3. Shoes plus socks
4. Chemical-resistant headgear for overhead exposure

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

CHEMIGATION PROHIBITION

Do not apply this product through any type of irrigation system.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. STORAGE: Malathion ULV should be stored at temperatures not exceeding 25 degrees C (77 degrees F). It should never be heated above 55 degrees C (131 degrees F), and also local heating above this temperature should be avoided.

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

CONTAINER DISPOSAL: 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 ¼ 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. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

AGRICULTURAL USES

Do not use this product for any uses other than those specified on this label. MALATHION ULV is used undiluted in specially designed aircraft or ground equipment capable of applying ultra low volumes for control of the insects indicated. Aerial applications are most effective when made at a boom height of 5 feet and a swath width of 55 feet. Apply only when weather conditions are favorable. Wind and rising air currents may cause undesirable spray drift and reduce insect control. Mist blowers and boom sprayers utilizing a controlled air flow to facilitate particle size and spray deposition may be used at a vehicle speed of 4 to 10 mph. Mist blowers with pump capable of producing up to 40 psi and blower speeds of 2600 rpm are satisfactory. Use flat fan nozzles, 8001 to 8002, placed 30 degrees into air blast or rotary atomizers into the air blast that produce an efficient spray particle with a mass median diameter of 40 to 100 microns. Swath widths should not exceed 30 feet. Apply only when weather conditions are favorable. Wind and rising air currents may cause undesirable spray drift and reduce insect control. Boom sprayers with a filtered rotary air compressor, either PTO or gas engine driven or an air pump capable of producing at least 12 psi are satisfactory. Use air pressure on chemical tanks and an accurate metering valve to assure a calibrated flow of the pesticide. Air should be regulated with relief valve and gauge for proper air and liquid mixture. Pneumatic-type spray nozzles, as suggested by equipment manufacturer, should be used for spray particles with mass median diameter of 30 to 100 microns. Apply only when weather conditions are favorable. Wind and rising air currents may cause undesirable spray drift and reduce insect control. Repeat applications should be made as necessary unless otherwise specified.

IMPORTANT

Undiluted spray droplets of MALATHION ULV will permanently damage automobile paint. Cars should not be sprayed. If accidental exposure does occur, the car should be washed immediately. Consult your state experiment station or state extension service for proper timing of sprays. This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

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GENERAL USES

Observe days interval between last application and harvest indicated in ().

ALFALFA:

Alfalfa caterpillar (0) - 8 fl. oz. per acre. Apply when larvae are small.

Western yellow striped armyworm (5) - 12 fl. oz. per acre. Apply when larvae are large or when foliage is dense.

Alfalfa weevil larvae (5) - 16 fl. oz. per acre. Apply when day temperatures are expected to exceed 65 deg F and when 50 to 70% of leaves show feeding damage.

Beet armyworm (0) - 8 fl. oz. per acre. Apply when larvae are small.

Beet armyworm (5) - 16 fl. oz. per acre. Apply when larvae are large or when foliage is dense.

Grasshoppers (0) - 8 fl. oz. per acre. Do not apply to alfalfa in bloom. Do not apply to seed alfalfa.

BEANS: The resultant crop foliage of beans (forage and straw/hay) cannot be used as livestock feed. In addition, livestock grazing is not permitted for the foliage of beans treated with Malathion ULV. (Lima, Green, Snap, Navy, Red Kidney, Wax, Dry, Blackeye): Mexican Bean Beetle, Leafhoppers, Green Cloverworm, Japanese Beetle Lygus Bug (1) - 8 fl. oz. per acre.

BLUEBERRIES:

Blueberry Maggot (0) - 10 fl. oz. per acre.

CHERRIES:

Cherry Fruit Fly (1) - 12 to 16 fl. oz. per acre. Apply by aircraft only. Use higher rate when foliage is heavy or infestation is severe. Make first application as soon as flies appear.

CEREAL CROPS (Barley, Corn, Oats, Wheat) and GRASSES:

Cereal leaf beetle - Barley, oats, wheat (7) - Corn (5) - Grasses (0) - 4 to 8 fl. oz. per acre.

CLOVER, PASTURE AND RANGE GRASS, GRASS, GRASS HAY, NON-AGRICULTURAL LAND (Wasteland, Roadsides):

8 to 12 fl. oz. per acre. Do not apply to clover in bloom.

CORN:

Adult Corn Rootworm (5) - 4 fl. oz. per acre.

COTTON:

Early Season Insects, Thrips, Fleahoppers, Leafhoppers (0) - 4 to 8 fl. oz. per acre.

Boll Weevil (0) - 8 to 12 fl. oz. per acre for early to midseason; 16 fl. oz. per acre for late season.

Grasshoppers (0) - 8 fl. oz. per acre.

Lygus bugs (0) - 8 to 12 fl. oz. per acre and 16 fl. oz. per acre for very heavy migrating populations.

GRAIN CROPS (Barley, Corn, Oat, Rye, Rice and Wheat):

Grasshoppers (7 days except corn - 5) - 8 fl. oz. per acre.

GRAIN SORGHUM: The resultant crop foliage of sorghum (fodder/stover and forage) cannot be used as livestock feed. In addition, livestock grazing is not permitted for the foliage of sorghum treated with any formulation of Malathion ULV.

Sorghum Midge (7) - 8 to 12 fl. oz. per acre. Apply during the bloom stage.

Grasshoppers (7) - 8 fl. oz. per acre.

RICE - Grain Form (Louisiana, Texas):

Broadcast use only over intermittently flooded area. Application may not be made around bodies of water where fish or shellfish are grown and/or commercially harvested.

Rice Stink Bug (7) - 8 fl. oz. per acre. Apply by aircraft only. Apply during early milk and dough stage of growing rice.

NONAGRICULTURAL LANDS:

Beet Leafhopper (on wild host plants) (0) - 8 fl. oz. per acre.

OTHER AGRICULTURAL USES

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Alfalfa, Clover, Pasture and Range Grass, Grass and Grass Hay, Grain Crops (corn, rice, grain sorghum, barley, oats and wheat), Beans, Rice, and Nonagricultural Lands (wasteland): Adult mosquitoes and flies - Apply MALATHION ULV at the rate of 2 to 4 fluid ounces for control of adult mosquitoes applications as necessary. On alfalfa, clover, pasture and range grass, grass and grass hay, may be applied on day of harvest or grazing. Do not apply to alfalfa and clover in bloom. Do not use on seed alfalfa. On grain crops make no application within 7 days of harvest or forage use; on corn, within 5 days of harvest or forage; on rice, within 7 days of harvest; on beans within 1 day of harvest.

MOSQUITO CONTROL IN POPULATED AND RURAL AREAS IMPORTANT NOTICE: TO BE APPLIED ONLY BY TRAINED PERSONNEL OF PUBLIC HEALTH ORGANIZATIONS, MOSQUITO ABATEMENT DISTRICTS OR PEST CONTROL OPERATORS.

AERIAL APPLICATION

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 MALATHION ULV per acre. Apply only when weather conditions are favorable. Wind and rising air currents may cause undesirable spray drift and reduce insect control.

IMPORTANT - Undiluted spray droplets of MALATHION ULV will permanently damage vehicle paint finishes unless the aircraft used for the ultra low volume application meets all of the specifications listed below:

FIXED WING AIRCRAFT

1. Aircraft is operated at 150 mph or more.
2. There are no leaks in the ultra low volume spray system.
3. Nozzles are placed on the boom at a 45 degree angle down and into the wind.
4. Diaphragm check valves are used on all nozzles to insure positive cut-off of the spray.
5. Dosage of MALATHION ULV does not exceed 3 fluid ounces per acre.
6. The spray system produces droplets of this product in the 50 to 60 mass median diameter (MMD) micron range, with no more than 10% of the droplets exceeding 100-microns, as determined by readings made from microscope slides coated with DRI-FILM* or TEFLON** HELICOPTER

Equipment specifications:

1. Rotary nozzle equivalent to Beecomist Spray Head Assembly Model No. 350 equipped with:
 - a. A direct reading RPM tachometer or low RPM signal light readily visible to operator;
 - b. A stainless steel porous metal sleeve, 20 micron pore size, dynamically balanced to the nozzle;
 - c. A diaphragm check valve as near to the rotary nozzle as possible to insure positive cut off of the spray;
 - d. Nozzle on-off switch separate from main switch and pump switch.
2. Minimum no-load nozzle speed of 10,500 RPM.
3. A continuous nonpulsating metered flow must be maintained by a variable speed metering pump equipped with:
 - a. a positive cut off valve between tank and pump;
 - b. a flow gauge or tachometer visible to operator;
 - c. a pump on-off switch separate from main switch and nozzle switch.
4. Maximum flow rate of 0.5 gallon per minute per nozzle.
5. Rotary nozzle must be mounted behind and below the boom with sleeve directed toward the rear of the aircraft and parallel to the ground during flight. Nozzle must be positioned to minimize air turbulence and the collection of MALATHION ULV droplets on mounting brackets, feed lines, fittings, etc., or any part of the aircraft.

OPERATING PROCEDURES

6. MALATHION ULV must be prefiltered through a 10 micron filter prior to transfer into helicopter tank. A 50 mesh stainless steel line strainer must be installed in the pump feed line.
7. Entire system, including tank, pump, nozzle and feed lines, to be used only for application of MALATHION ULV.
8. Entire system must be inspected daily to insure that there are no leaks.
9. Sleeve must be removed and cleaned immediately after each use by washing with hot water and blowing dry from outside in with clean air.
10. Rotating nozzle must be turned on and operating before turning on pump. For shut off, pump must be shut off and lines clearer prior to stopping nozzle rotation.
11. Dosage of MALATHION ULV does not exceed 3 fluid ounces per acre.

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12. The spray system must produce droplets of MALATHION ULV with a mass median diameter (MMD) of less than 50 microns, with no more than 2.5% of the droplets exceeding 100 microns, as determined by readings made from microscope slides coated with DRI-FILM* or TEFLON**

*Trademark of General Electric Company

**Registered Trademark of E.I. duPont de Nemours & Co. Inc.

GROUND APPLICATION

Thermal Aerosols or Fogs

For control of adult mosquitoes with thermal aerosols or fogs, apply MALATHION ULV at the rate of 6 to 8 oz. actual/gallon (3.9-5.2 gallons MALATHION ULV in 100 gallons 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 to 400 feet.

*There is a great variation in the chemical composition of fuel oils which may be used as thermal fog solvents. These differences may cause sludge and/or affect the solubility of the MALATHION ULV.

NONTHERMAL AEROSOLS

ADULT MOSQUITO CONTROL - For control of adult mosquitoes over a 300-foot swath with nonthermal aerosols of MALATHION ULV using the following rates at the indicated vehicle speeds:

Vehicle Speed Rate per Hour	Flow Rate of MALATHION ULV Fluid Ounces Per Minute	Maximum Flow Rate per hour
5	1.0 to 2.1 fluid ounces	1 gallon
10	2.0 to 4.3 fluid ounces	2 gallons
15	3.0 to 6.3 fluid ounces	3 gallons
20	4.0 to 8.6 fluid ounces	4 gallons

ADULT STABLE FLY CONTROL - For control of adult stable flies over a 300-foot swath with nonthermal aerosols of MALATHION ULV using the ultra low-volume method, use the following flow rates at the indicated vehicle speeds.

Vehicle Speed Rate per Hour	Flow Rate of MALATHION ULV Fluid Ounces per Minute	Maximum Flow Rate per hour
5	2.1 fluid ounces	1 gallon
10	4.3 fluid ounces	2 gallons

DROPLET SIZE

1. The Mass Median Diameter (MMD) of the droplets should not exceed 17 microns. The MMD is the drop diameter which divides the spray volume into two equal parts; i.e., 50% of the volume is in the drop sizes below the MMD and 50% is above the MMD.
2. Spray droplets should not exceed 32 microns in size. Three percent of the spray droplets (6 droplets out of 200) can exceed 32 microns providing the MMD does not exceed 17 microns and no droplets exceed a maximum of 48 microns. Larger droplets, when transported by natural air currents, impinge more readily on objects in their pathway and will permanently damage automobile type paints.
3. More than one-half of the total spray mass must consist of droplets in the 6 to 18 micron range to achieve adequate dispersal of insecticide over a 300-foot swath.
4. A minimum of two-thirds, preferably four-fifths of the total spray mass must consist of droplets not exceeding 24 microns in range.

OPERATING EQUIPMENT

Each Nonthermal Aerosol Generator used for dispersal of MALATHION ULV to control adult mosquitos must have minimum capability of producing the droplet spectrum described under DROPLET SIZE. 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. The unit should be rechecked as frequently as necessary 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. Manufacturer's equipment 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.

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FLOW RATE - must be regulated by accurate flow meter - not greater than 1 gallon per hour at 5 mph or 2 gallons per hour at 10 mph or 3 gallons per hour at 15 mph, or 4 gallons per hour at 20 mph.

NOZZLE DIRECTION - rear of the vehicle - upward at an angle of 45 degrees or more

VEHICLE SPEED - not greater than 20 miles per hour - shut off spray equipment when vehicle is stopped.

IMPORTANT - Spray droplets of undiluted MALATHION ULV will permanently damage automobile paint unless all the conditions described and recommended in this leaflet are met.

**DIRECTIONS FOR DETERMINING THE DROPLET SIZE OF
MALATHION ULV
Nonthermal Aerosols**

Permanent records of each droplet size determination must be kept and made available to MICRO FLO COMPANY, upon request.

1. **PREPARATION OF SLIDES WITH DRI-FILM MALATHION ULV** droplet sizes are determined by depositing a sample of the aerosol on a coated glass slide and measuring the droplets under a high-power microscope. Ordinary 3" x 1" glass slides must be coated with silicone (General Electric SC-87 DRI-FILM) prior to sampling to prevent excessive spreading or coalescence of the droplets. The slides are dipped into a 10 percent solution of DRI-FILM in toluene, drained and dried at about 200 degrees F, for 30 minutes after which they are dipped in acetone, allowed to dry and stored in a tight slide box. Coating solution must be freshly prepared. Do not store coating solution because it will deteriorate. Slides are lightly polished with a soft tissue before using to remove any foreign particles.

2. **DEPOSITION OF MALATHION ULV DROPLETS ON SLIDES** Droplets should be collected under ideal operation conditions to insure representative sampling of droplets in the aerosol. A sample of the MALATHION ULV aerosol is deposited on a slide by waving the slide as rapidly as possible perpendicular through the aerosol cloud at a distance of 25 feet from the point of discharge. The slide velocity may be increased by attaching it to a 3 or 4 foot stick by means of a spring paper clip. At least two slides should be exposed to insure an adequate sample. Store slides in a tight slide box for transfer to a location where measurements can be made. Avoid excessive heat during transit and store in a cool place until measurements can be made. Although label specifications require the aerosol nozzle to be angled upward at 45 degrees or more during operation, it is more convenient to position the nozzle parallel to the ground for droplet sampling. If this is not possible it will be necessary to be positioned at a sufficient height to obtain a representative sample of the aerosol.

3. **DETERMINATION OF MALATHION ULV DROPLET SIZES** A microscope with mechanical stage and an eyepiece micrometer are used to determine the size of the individual aerosol droplets. Prior to taking measurements, the divisions of the eyepiece micrometer must be calibrated into microns by means of a stage micrometer. In the example represented in Table 1, droplets were measured at 400x magnification. At that magnification each division of the eyepiece was calibrated to equal 3.5 microns. At least 200 droplets should be measured. Usually this is easily accomplished on one slide. An accurate method is to measure all droplets that pass through the micrometer scale as the slide is moved from one edge to the other by using the mechanical stage. Measurements should not be taken along the margins of the slide. It is more convenient to measure in terms of the divisions of the eye-piece micrometer and then convert these divisions into microns. The measurements converted into microns must then be corrected for the amount of spread that occurred on the slides. The MALATHION ULV spread factor for silicone-coated slides is 0.5. Therefore, in Table 1 each division of the eyepiece actually equals 1.75 microns (3.5 microns times the 0.5 spread factor). The spread factor for TEFLON-coated slides is 0.69. The following procedures as given for silicone-coated slides, would be the same for TEFLON-coated slides once the value for each eyepiece division has been determined.

The measurements are tabulated and processed as in Table 1. The Maximum Diameter is calculated by converting the diameter of the largest droplet measured into microns. In Table 1, the largest droplet measured has a diameter of 17 eyepiece divisions. Therefore, the Maximum Diameter is 33.3 microns ($17 \times 1.75 = 33.3$). To determine the Mass Median Diameter (MMD), the accumulative percentages from the last column in Table 1 are plotted against the eyepiece division (D) on arithmetic probability paper as in Figure 1. Directly across from the 50 percent point on the line is the median droplet size in eyepiece divisions which must be converted to microns. In Figure 1, 9.2 eyepiece divisions times the conversion factor of 1.75 equals a Mass Median Diameter of 16.1 microns.

Figure 1.

Directly across from the 50 percent point on the line is the median droplet size in eyepiece divisions which must be converted to microns. In Figure 1, 9.2 eyepiece divisions times the conversion factor of 1.75 equals a Mass median Diameter of 16.1 microns.

(Insert micron chart here)

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