

PM19

241-208

1.7.19  
File



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

EPA 1-1091

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Desiree L. Little  
AMERICAN CYANAMID COMPANY  
AGRI RESEARCH DIV - U.S. REGULATORY AFFA  
BOX 400  
PRINCETON NJ 08543

Subject: Label Amendment Submission of 04/15/94 in Response to PR Notice 93-7  
EPA Reg. No. 241-208  
CYTHION ULV INSECTICIDE

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

WHAT THIS ACCEPTANCE MEANS:

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (WPS) labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have not been reviewed or accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

WHAT YOU NEED TO DO NEXT:

Send to EPA one (1) copy of the final printed labeling:

- BEFORE selling or distributing any product bearing the final printed labeling
- AND
- WITHIN one year from date of this acceptance.



Recycled/Recyclable  
Printed with Soy/Candia Ink on paper that  
contains at least 50% recycled fiber

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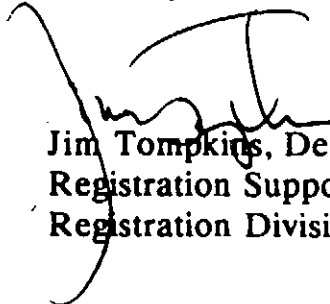
Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs (7505C)  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, D.C. 20460-0001

Hand or courier deliveries of final printed labeling may be made to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

Sincerely,



Jim Tompkins, Deputy Chief  
Registration Support Branch  
Registration Division (7505W)

Attachment

**BEST AVAILABLE COPY**

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division

Desiree L. Little  
AMERICAN CYANAMID COMPANY  
AGRI RESEARCH DIV - U.S. REGULATORY AFFA  
BOX 400  
PRINCETON NJ 08543

Comment for: EPA Reg Nr.241-208  
CYTHION ULV INSECTICIDE

The following specific comments pertain to your WPS  
labeling submission concerning the product  
cited above:

No comment.

1/3/94

**CYTHON® ULV**  
insecticide  
"The Premium Grade Malathion"®

**ACTIVE INGREDIENT:**

Malathion: O,O-dimethyl phosphorodithioate of diethyl mercaptosuccinate..... 95.0%

**INERT INGREDIENTS** ..... 5.0%

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

(One gallon contains 9.79 pounds of malathion)

EPA Reg. No. 241-208

EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION!**

**!PRECAUCION!**

~~PRECAUCION AL USUARIO: Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente. Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)~~

**STATEMENT OF PRACTICAL TREATMENT**

Organophosphate

**IF SWALLOWED:** Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not give anything by mouth to an unconscious person.

**IF ON SKIN:** Wash with plenty of soap and water. Get medical attention.

**IF IN EYES:** Flush with plenty of water. Call a physician if irritation persists.

**NOTE TO PHYSICIAN:** This product may cause cholinesterase inhibition. Atropine is antidotal. 2-PAM may be effective as an adjunct to atropine.

In case of emergency endangering life or property involving this product call collect, day or night, Area Code 201-835-3100.

See next page for additional Precautionary Statements

**American Cyanamid Company**

Agricultural Division  
Specialty Products Department  
Wayne, NJ 07470 ©1994

ACCEPTED  
with COMMENTS  
In EPA Letter Dated

Net Contents:

JUN 1 1994

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

4/94

® Registered Trademark of American Cyanamid Company

**BEST AVAILABLE COPY**

241-208

## PRECAUTIONARY STATEMENTS

5/2/99

### HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)

#### CAUTION

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

#### Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow instructions for category F on an EPA chemical resistance category selection chart.

##### Applicators and other handlers must wear:

- \* Long-sleeved shirt and long pants.
- \* Chemical-resistant gloves, such as barrier laminate, butyl rubber ( $\geq 14$  mils), nitrile rubber ( $\geq 14$  mils), or Viton ( $\geq 14$  mils).
- \* Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

##### Engineering Control Statements:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

##### User Safety Recommendations:

Users should:

- \* Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- \* Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### ENVIRONMENTAL HAZARDS

This product is toxic to fish, aquatic invertebrates and aquatic life stages of amphibians. 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.

## DIRECTIONS FOR USE

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

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

### 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 (PPE), and restricted-entry interval. 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:

- \* Coveralls,
- \* Chemical-resistant gloves, such as barrier laminate, butyl rubber (≥14 mils), nitrile rubber (≥14 mils), or Viton (≥14 mils), and
- \* Shoes plus socks.

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

CYTHON ULV insecticide may only be used in accordance with the directions in this label or approved supplementary labeling. Read all directions carefully before using.

Undiluted spray droplets of CYTHON ULV insecticide will permanently damage automobile paint. If accidental exposure does occur, the vehicle should be washed immediately.

### STORAGE AND DISPOSAL

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

**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:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Before using, read the directions contained in 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.

# MOSQUITO CONTROL IN POPULATED AND RURAL AREAS

7-8-19

## 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 CYTHION 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 CYTHION 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° angle down and into the wind.
4. Diaphragm check valves are used on all nozzles to insure positive cutoff of the spray.
5. Dosage of CYTHION 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<sup>1</sup> or TEFLON<sup>2</sup>.

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<sup>1</sup>Trademark of General Electric Company

<sup>2</sup>Trademark of E.I. duPont de Nemours & Co., Inc.

### 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.

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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 the 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 CYTHION ULV droplets on mounting brackets, feed lines, fittings, etc., or any part of the aircraft.

### **Operating Procedures**

1. CYTHION 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.
2. Entire system, including tank, pump, nozzle and feed lines, to be used only for application of CYTHION ULV.
3. Entire system must be inspected daily to insure that there are no leaks.
4. Sleeve must be removed and cleaned immediately after each use by washing with hot water and blowing dry from outside in with clean air.
5. Rotating nozzle must be turned on and operating before turning on pump. For shut off, pump must be shut off and lines cleared prior to stopping nozzle rotation.
6. Dosage of CYTHION ULV does not exceed 3 fluid ounces per acre.
7. The spray system must produce droplets of CYTHION 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.

## **GROUND APPLICATION**

### **Thermal Aerosols or Fogs**

For control of adult mosquitoes with thermal aerosols or fogs, apply CYTHION ULV at the rate of 6-8 oz. actual/gallon (3.9-5.2 gallons CYTHION 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 300-400 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 CYTHION ULV. For more complete details on tests for sludge formation and solubility in thermal fog solutions, write American Cyanamid Company, Agricultural Division, One Cyanamid Plaza, Wayne, New Jersey 07470.

**Nonthermal Aerosols**

Over a 300-foot swath can be produced using the nonthermal ultra low volume aerosol method with CYTHION ULV. Use the following rates at the indicated vehicle speeds:

Vehicle Speed Miles per Hour	Flow Rate of CYTHION ULV		Maximum Flow Rate per Hour
	Fluid Ounces per Minute		
5	1.0 to 2.1	fluid ounces	1 gallon
10	2.0 to 4.3	fluid ounces	2 gallons
15	3.0 to 6.45	fluid ounces	3 gallons
20	4.0 to 8.6	fluid ounces	4 gallons

For control of adult stable fly in populated and rural areas with nonthermal aerosols of CYTHION ULV using the ultra low volume method, use the following flow rates at the indicated speeds:

Vehicle Speed Miles per Hour	Flow Rate of CYTHION ULV		Maximum Flow Rate per Hour
	Fluid Ounces per Minute		
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 sized 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 CYTHION ULV to control adult mosquitoes 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. 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.  
– 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.

Nozzle Direction – rear of the vehicle.  
– upward at an angle of 45° or more.

Vehicle Speed – not greater than 20 miles per hour.  
– shut off spray equipment when vehicle is stopped.

**IMPORTANT** – Spray droplets of undiluted CYTHION ULV will permanently damage automobile paint unless all the conditions described and recommended in this label are met.

### Directions for Determining the Droplet Size of CYTHION ULV Nonthermal Aerosols

Permanent records of each droplet size determination must be kept and made available to American Cyanamid Company upon request.

#### 1. Preparation of Slides with DRI-FILM

CYTHION 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°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 CYTHION ULV Droplets on Slides

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Droplets should be collected under ideal operating conditions to insure representative sampling in the aerosol. A sample of the CYTHION 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° 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 CYTHION 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 eyepiece 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 slide. The CYTHION ULV spread factor for silicon-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 procedure 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 had a diameter of 19 eyepiece divisions. Therefore, the Maximum Diameter is 33.3 microns ( $19 \times 1.75 = 33.3$ ).

To determine the Mass Median Diameter (MMD), the accumulative percentages from the last column in Table 1 are plotted against the eyepiece divisions (D) on semi-logarithmic 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.

Table 1 - Representative Count of CYTHION ULV Aerosol Droplets Impinged on Microscope Slides Coated with DRI-FILM.

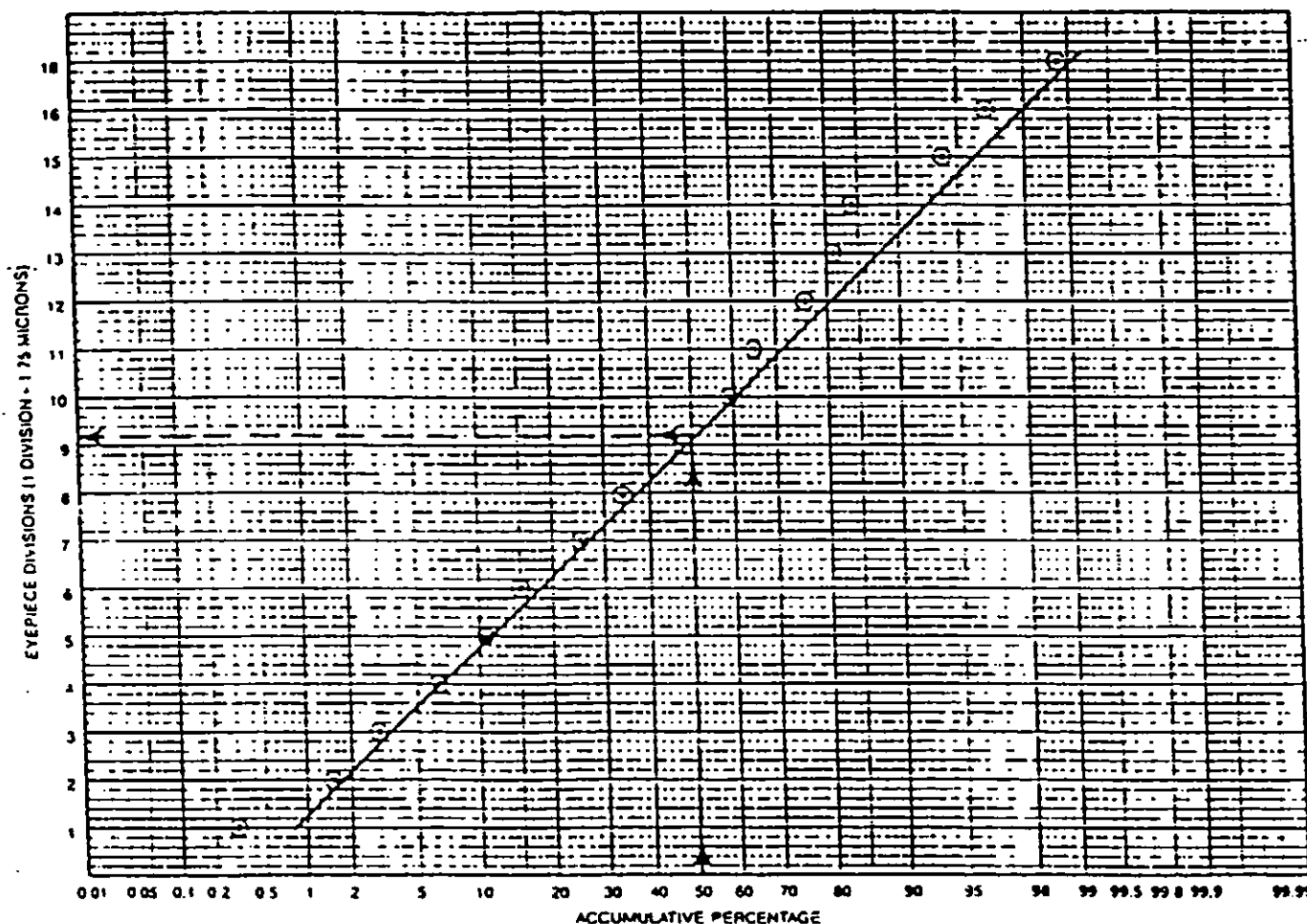
Eyepiece Divisions (D*)	Number of Droplets (N)	DxN	% of Total DxN $\Sigma(DxN)$	Accumulative Percentages
1	5	5	0.31	0.31
2	10	20	1.22	1.53
3	9	27	1.65	3.18
4	12	48	2.93	6.11
5	15	75	4.58	10.69
6	12	72	4.40	15.09
7	25	175	10.70	25.79
8	14	112	6.85	32.64
9	28	252	15.40	48.04
10	19	190	11.61	59.65
11	14	154	9.41	65.06
12	10	120	7.33	76.39
13	6	78	4.77	81.16
14	4	56	3.42	84.58
15	11	165	10.09	94.67
16	2	32	1.96	96.63
18	2	36	2.20	98.83
19	1	19	1.16	99.99
Total	199	1636		

\* Measurements were taken at 400x magnification. Each eyepiece division equals 1.75 microns (3.5 microns times the 0.5 spread factor).

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Figure 1.

Percentage of the total volume of aerosol samples below each stated droplet size (from Table 1). The Mass Median Diameter is determined from the 50 percent point on the line. The Mass Median Diameter (MMD) = 9.2 divisions times 1.75 = 16.1 microns.



**BEST AVAILABLE COPY**

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<b>AGRICULTURAL USES</b>
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### OPERATING INSTRUCTIONS

~~Do not apply this product in such a manner as to directly or through drift, expose workers or other persons. The area being treated must be vacated by unprotected persons.~~

~~Do not enter treated areas without protective clothing until sprays have dried. Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.~~

~~Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: CAUTION. Area treated with CYTHON ULV insecticide (date of application). Do not enter without appropriate protective clothing.~~

CYTHON 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 50 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 a pump capable of producing up to 40 psi and blower speeds of 2600 rpm are satisfactory. Use flat fan nozzles, 8001 to 8002, place 30° 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 CYTHON ULV WILL PERMANENTLY damage automobile paint. If accidental exposure does occur, the vehicle 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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Crop	Pests Controlled	Fluid Ounces Per Acre	Days to Harvest or Grazing & Comments	
Alfaifa	Alfaifa Caterpillar	8	0 day. Apply when larvae are small.	
	Western Yellow Striped Armyworm	12	5 days. Apply when larvae are large or when foliage is dense.	
	Alfaifa Weevil Larvae	16	5 days. Apply when day temperatures are expected to exceed 65°F and when 50-75% of leaves show feeding damage.	
	Beet Armyworm		8	0 day. Apply when larvae are small.
			16	5 days. Apply when larvae are large or when foliage is dense.
	Grasshoppers	8	0 day.	
Do not apply to alfalfa in bloom. Do not apply to seed alfalfa.				
Barley	Grasshoppers	8	7 days.	
	Cereal Leaf Beetle	4-8	7 days.	
Beans (lima, green, snap, Navy, red kidney, wax, dry, blackeye)	Mexican Bean Beetle	8	1 day.	
	Leafhoppers			
	Green Cloverworm			
	Japanese Beetle			
	Lygus Bug			
Blueberries	Blueberry Maggot	10	0 day.	
Cherries	Cherry Fruit Fly	12-16	1 day. Apply by aircraft only. Use higher rate when foliage is heavy or infestation is severe. Make first application as soon as flies appear.	
Clover, Pasture and Range Grass, Grass Hay	Blackgrass Bugs	8-12	0 day. Do not apply to clover in bloom.	
	Grasshoppers			
Corn	Adult Corn Rootworm	4	5 days.	
	Grasshoppers	8	5 days.	
	Cereal Leaf Beetle	4-8	5 days.	
Cotton†	Aphids (Green Peach and Cotton)	14-16		

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Boll Weevil	8-16	Early to late season.
Grasshoppers	8	
Fleahoppers Leafhoppers	4-8	
Lygus Bugs including Tarnished Plant Bugs	8-12	Moderate Populations.
	16	Very heavy or migrating Populations.
Thrips	4-8	

†For use on cotton: CYTHION ULV can be used alone as a ULV concentrate spray or diluted in once-refined cottonseed or vegetable oil sufficient to make at least one quart of finished spray per acre.

Flax	Grasshoppers	8	Apply once per season. Do not apply within 45 days of harvest. Do not graze or feed forage.
Grain Sorghum	Grasshoppers	8	7 days.
	Sorghum Midge	8-12	7 days. Apply during the bloom stage.
Grasses	Blackgrass Bugs Grasshoppers	8-12	0 day.
	Cereal Leaf Beetle	4-8	
Oats	Cereal Leaf Beetle	4-8	7 days.
	Grasshoppers	8	7 days.
Peas (Northwest)	Pea Weevil	8	14 days.
Rice	Grasshoppers	8	7 days.
Rice-Grain Form (Louisiana, Texas)	Rice Stink Bug	8	7 days. Apply by aircraft only. Apply during early milk and dough stage of growing rice.
Rye	Grasshoppers	8	7 days.
Safflower	Grasshoppers Lygus Bugs	8	3 days of harvesting seeds.
Soybeans	Mexican Bean Beetle Grasshoppers Japanese Beetle Green Cloverworm	8	7 days.



Sugar Beets	Grasshoppers Sugar Beet Root Maggot Adults	8	0 day. 7 days. If tops are to be used for food or feed.
Wheat	Cereal Leaf Beetle Grasshoppers	4-8 8	7 days. 7 days.
Nonagricultural Lands (Wastelands, roadsides)	Beet Leafhopper (on wild host plants) Blackgrass Bugs Grasshoppers	8 8-12	0 day. 0 day.
Beef Cattle-Feed Lots and Holding Pens	Adult Flies and Mosquitoes	6-8	0 day.

**FOREST INSECTS**

Apply with aircraft equipped for ultra low volume application. Make application when air is calm and temperature is below 68°F. Do not allow spray to contact ferns, hickory and maples as injury may result. Do not spray on elms under extreme heat, drought or disease conditions.

Tree	Pests Controlled	Fluid Ounces per Acre	Directions
Douglas Fir True Fir Spruce	Spruce Budworm	13	Apply when highest percentage of larvae are in the fifth instar.
Hemlock	Hemlock Looper	8	Apply when most larvae are in the third and fourth instar.
Pines	European Pine Sawfly	10	Apply when larvae are in the first or second instar or before they reach 1/2 inch in length.
	Saratoga Spittlebug	10	Apply when 95% of the population has become adult.
Larch	Larch Casebearer	8	Apply in spring as soon as larvae break hibernation and begin feeding on new foliage.

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<b>OTHER AGRICULTURAL USES:</b>
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Alfalfa, Clover, Pasture and Range Grass and Grass Hay, Grain Crops, Beans, Rice, Tomatoes and Nonagricultural Lands (wasteland): Adult mosquitoes and flies -- Apply CYTHION ULV at the rate of 2 to 4 fl. oz. per acre for control of adult mosquitoes and at 6 to 8 fl. oz. per acre for control of adult flies. Repeat 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; or rice, within 7 days of harvest; on beans and tomatoes, within 1 day of harvest.

**IMPORTANT**

Consult your state experiment station or state extension service for proper timing of sprays.

These products are highly toxic to bees exposed to direct treatment of residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

All applicable directions, restrictions and precautions on the EPA registered labels are to be followed.

Operator should inspect and calibrate equipment to assure that the proper amounts of pesticide are being applied, and that uniform coverage is obtained.

This label must be in the possession of the user at time of pesticide application.

Also for use in accordance with the recommendations and instructions issued by the United States Department of Agriculture for quarantine programs. To be used only by or under the direction of Federal/State personnel for quarantine treatments.

### **DISCLAIMER**

The label instructions for the use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, automobile paint damage, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use or application of the product contrary to label instructions, all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user.

American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from a breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

American Cyanamid Company makes no other express or implied warranty, including any other express or implied warranty of **FITNESS** or **MERCHANTABILITY**.

The sale of this product does not include a license under any patent owned by American Cyanamid Company.