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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg.
Number:

48273-23

Date of Issuance:

FEB 23 1998

NOTICE OF PESTICIDE:

☒ Registration
☐ Reregistration

Term of Issuance:

Conditional

Name of Pesticide Product:

Marman Malathion ULV

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Marman USA, Inc.
P.O.Box 22829
Tampa FL 33622

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

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

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

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

2. Make the following label changes before you release the product for shipment:

- a. Add the designation, "EPA Reg. No. 48273-23".
- b. Add a 7-day pre-harvest interval for grain sorghum in the paragraph headed, Other Agricultural Uses.
- c. Add the following aquatic use restriction for use on rice under the Other Agricultural Uses paragraph:
"Broadcast use only over intermittently flooded areas. Application may not be made around bodies of water where fish or shellfish are grown and/or harvested commercially."

Date:

FEB 23 1998

MARMAN MALATHION ULV

Ultra Low Volume Concentrate Insecticide

ACCEPTED
with COMMENTS
in EPA Letter Dated:

FEB 23 1998

BEFORE USING THIS PESTICIDE - STOP - READ THE LABEL

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

ACTIVE INGREDIENT:

*Malathion 95.0%

INERT INGREDIENTS 5.0%

*O,O-dimethyl phosphorodithioate Total 100.0%
of diethyl mercaptosuccinate

48273-23

1 Gallon Contains 9.79 Pounds of Malathion

Keep Out of Reach of Children
CAUTION

See back panel for additional precautionary statements.

NET WEIGHT: 564 LBS. (55 GALS.)

EPA Reg. No. 48273-EG

EPA Est. 51036-GA-1

MARMAN USA, INC.

P.O. Box 22829

Tampa, FL 33622-2829

[Back Panel]

PRECAUTIONARY STATEMENTS

Hazards to Humans & Domestic Animals

CAUTION: Harmful by swallowing, inhalation or skin contact. Avoid breathing spray mist. Avoid contact with skin. Do not contaminate food or feed products.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the 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, Nitrile Rubber or Viton) and 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 CONTROLS 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.
- 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.

Statement of Practical Treatment

This product is an organophosphate and is a cholinesterase inhibitor.

If Swallowed: Call a physician or poison control center immediately. Induce vomiting by giving 1 or 2 glasses of water and touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. **If Inhaled:** Remove person to fresh air immediately. **If on Skin:** Wash affected areas with soap and water. **If in Eyes:** Flush with water for at least 15 minutes and get medical attention. **Note to Physician:** This material is a cholinesterase inhibitor. Treat symptomatically. Atropine is an antidote.

Environmental Hazards

This product is toxic to fish, aquatic invertebrates and aquatic life stages of amphibians. For terrestrial uses, do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. 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 in this leaflet 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.

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 manner of use or application, all of which are beyond the control of Marman. All such risks shall be assumed by the user. Marman 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. Marman makes no other express or implied warranty including any other express or implied warranty of Fitness or Merchantability.

DIRECTIONS FOR USE

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

Storage and Disposal

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

Storage: This product should be stored at temperatures not exceeding 25°C (77°F). It should never be heated above 55°C (131°F) and also local heating above this temperature should be avoided.

Pesticide Disposal: Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

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

AGRICULTURAL USES

Do not use this product for any uses other than those specified on this label.

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.

Agricultural Use Requirements**(Continued)**

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, Nitrile Rubber or Viton)
- Shoes plus socks.

This product 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 a 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° 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. 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. Repeat applications should be made as necessary unless otherwise specified.

IMPORTANT

Undiluted spray droplets of this product 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.

The grazing or feeding of the treated crop foliage by livestock is prohibited for beans (vines/forage and straw/hay) and grain sorghum (forage, fodder/stover and hay).

CROP	PESTS CONTROLLED	FL. OZ. PER ACRE	DAYS TO HARVEST or GRAZING and COMMENTS
Alfalfa	Alfalfa 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.
	Alfalfa weevil larvae	16	5 days. Apply when day temperatures are expected to exceed 65°F and when 50-70% of leaves show feeding damage.
	Beet armyworm	8	0 day. Apply when leaves 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.			
Beans (lima, green, snap, Navy, red kidney, wax, dry, blackeye)	Mexican Bean Beetle, Leafhoppers, Green Cloverworm, Japanese Beetle, Lygus Bug	8	1 day.
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.
Cereal Crops (barley, corn, oats, wheat) and grasses	Cereal leaf beetle	4-8	Barley, oats, wheat: 7 days; Corn: 5 days; Grasses: 0 day
Clover, Pasture and Range Grass, Grass, Grass Hay, Non-agricultural Land (wastelands, roadsides)	Grasshoppers	8-12	0 day. Do not apply to clover in bloom.

Corn	Adult Corn Rootworm	4	5 days.
Cotton	Early Season Insects, Thrips, Fleahoppers, Leafhoppers	4-8	0 day.
	Boll Weevil	8-16	0 day. Early to midseason.
		16	0 day. Late season.
	Grasshoppers	8	0 day.
	Lygus Bugs	8-12	0 day.
Grain Crops (barley, corn, oats, rye, rice, grain sorghum, wheat)		16	0 day. Very heavy migrating populations.
	Grasshoppers	8	7 days, except corn. Corn: 5 days. Rice: Broadcast use only over intermittently flooded areas. Application may not be made around bodies of water where fish or shellfish are grown and/or harvested commercially.

CROP	PESTS CONTROLLED	FL. OZ. PER ACRE	INTERVAL BETWEEN LAST APPLICATION AND HARVEST
Grain Sorghum	Sorghum Midge	8-12	7 days. Apply during the bloom stage.
Rice - Grain Form early (Louisiana and Texas)	Rice Stink Bug	8	7 days. Apply by aircraft only. Apply during milk and dough stage of growing. Broadcast use only over intermittently flooded areas. Application may not be made around bodies of water where fish or shellfish are grown and/or harvested commercially.
Nonagricultural Lands	Beet Leafhopper (on wild host plants)	8	0 day.

OTHER AGRICULTURAL USES

Alfalfa, Clover, Pasture and Range Grass, Grass and Grass Hay, Grain Crops (grain sorghum, barley, oats, rye and corn), Beans, Rice and Nonagricultural Lands (wasteland): Adult mosquitoes and flies: Apply this product at the rate of 2 to 4 fluid ounces for control of adult mosquitoes and at 6 to 8 fluid ounces per acre for control of adult flies and mosquitoes. Repeat applications as necessary. On alfalfa, clover, pasture and range grass, grass and grass hay, may be applied on day of harvest or grazing. The grazing or feeding of the treated crop foliage by livestock is prohibited for beans (vines/forage and straw/hay) and grain sorghum (forage, fodder/stover and hay). Do not apply to alfalfa and clover in bloom. Do not use on seed alfalfa. On grain crops other than grain sorghum, 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.

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, Town 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.

IMPORTANT: 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 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 ensure positive cut-off of the spray.
5. Dosage of this product 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-FILM¹ or TEFLON².

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 ensure positive cut-off of the spray;
 - d. nozzle on-off switch separate from main switch and nozzle 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 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 Malathion ULV droplets on mounting brackets, feed lines, fittings, etc., or any part of the aircraft.

Operating Procedures:

6. This product 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 this product.
8. Entire system must be inspected daily to ensure 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 cleaned prior to stopping nozzle rotation.
11. Dosage of this product does not exceed 3 fluid ounces per acre.
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-FILM¹ or TEFLON².

GROUND APPLICATION**Thermal Aerosols or Fogs**

For control of adult mosquitoes with thermal aerosols or fogs, apply this product at the rate of 6 - 8 oz. actual per gallon (3.9 - 5.2 gallons of this product 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 this product.

Nonthermal Aerosols

Adult Mosquito Control - For control of adult mosquitoes over a 300-foot swath with nonthermal aerosols of this product using the following rates at the indicated vehicle speeds:

Vehicle Speed Rate Per Hour	Flow Rate of This Product 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 this product using the ultra low volume method, use the following flow rates at the indicated vehicle speeds:

Vehicle Speed Rate Per Hour	Flow Rate of This Product 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 the dispersal of this product 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 ensure 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 ensure 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**
- rear of the vehicle.
- Direction:**
- 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 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 Marman upon request.

I. Preparation of Slides with DRI-FILM¹:

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-FILM¹) prior to sampling to prevent excessive spreading or coalescence of the droplets. The slides are dipped into a 10% solution of DRI-FILM¹ 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.

II. Deposition of Malathion ULV Droplets on Slides:

Droplets should be collected under ideal operating conditions to ensure representative sampling of droplets in the aerosol. A sample of 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 ensure 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 sufficient height to obtain a representative sample of the aerosol.

TABLE 1
Representative Count of Malathion ULV Aerosol Droplets
Impinged on Microscope Slides Coated with DRI-FILM¹

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	69.06
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).

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.

III. 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 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 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).

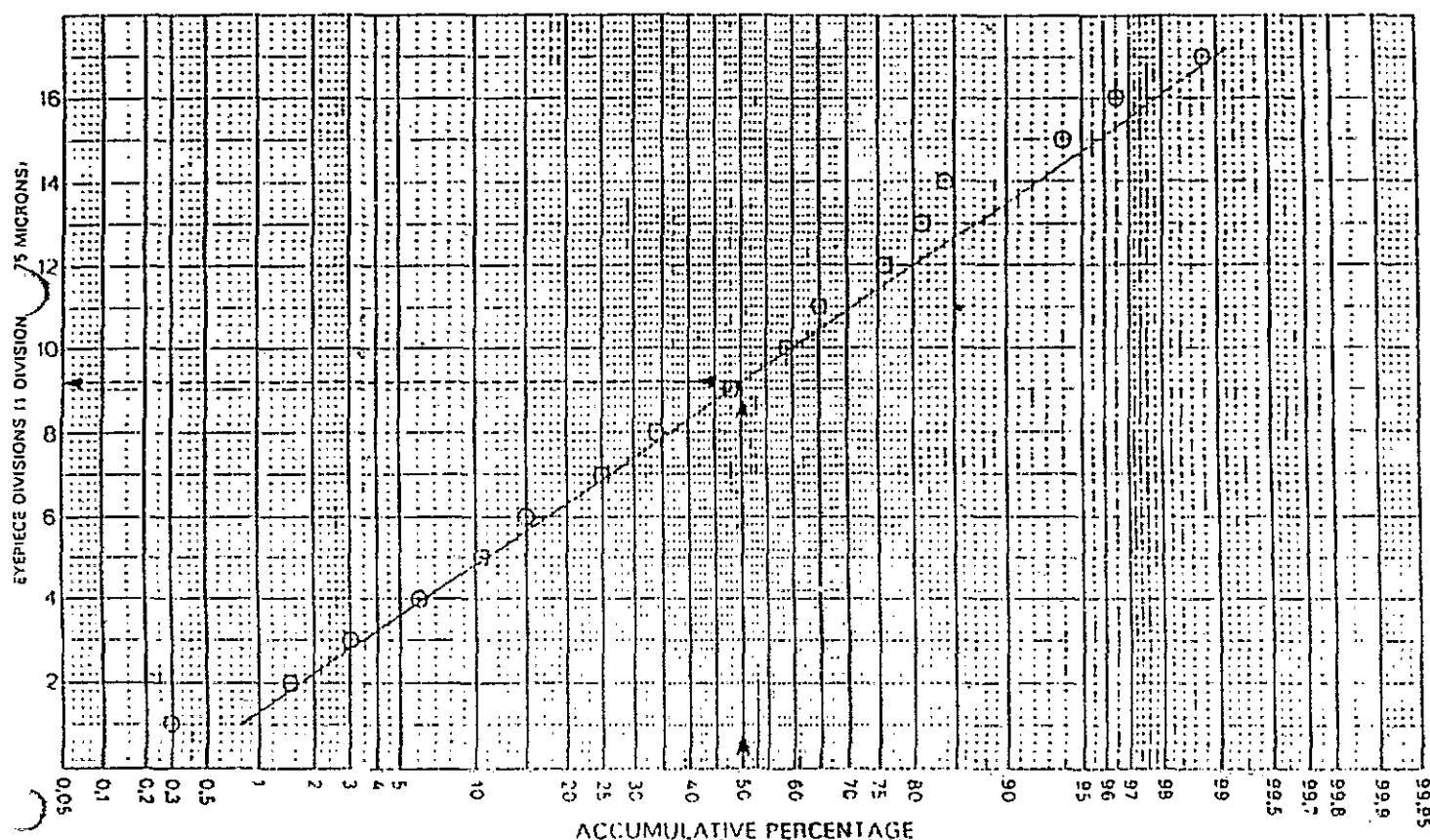
The spread factor for TEFLON²-coated slides is 0.69. The following procedure, as given for silicone-coated slides, would be the same for TEFLON²-coated slides once the value for each eyepiece division has been determined.

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 19 eye piece 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 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

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.



¹Trademark of General Electric Company

²Registered Trademark of E.I. duPont de Nemours & Co., Inc.