



COUNTY OF UNION

DEPARTMENT OF ENGINEERING, PUBLIC WORKS & FACILITIES MANAGEMENT

Joseph J. Policay, Jr., CPWM, Acting Director

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TOWNSHIP CLERK

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Clerk of the Board

**JOSEPH J. POLICAY, JR.,
CPWM,**
Division Director

April 3, 2024

**Municipal Clerks Office
Union County Municipality
Union County New Jersey**

Dear Municipal Clerk;

In accordance with NJAC 7:30-09.10 (e) 1: "Notification shall be made by mailing or delivering a packet of information annually to the municipality to be sprayed. Notification shall be mailed or delivered to the municipality's responsible official..."

Area wide notification is required for any application of adulticide used to control adult mosquitoes. This does not include the application of larvicides used for larval mosquito control. The application of adulticides for adult mosquito control is applied using a truck mounted ultra-low-volume misting machine. If an aerial application is warranted by rotor craft, your municipal officials will be notified. Our larval mosquito control measures include; eliminating standing water, applying larvicides in water when and where mosquito breeding is found, and biological measures (stocking with mosquito fish). Visit the Union County Website @ www.ucnj.org for more information.

Pesticide applications for mosquito control may be necessary in your municipality, Mosquito breeding and population is influenced by yearly rainfall and temperature. This packet is being sent to every municipality in Union County. Please note that receipt of this packet does not confirm that spraying will actually take place.

Included in this packet is the NJDEP approved question and answer fact sheet and USEPA approved product labels for each adulticide that may be used in Union County for the control of adult mosquitoes during 2024.

DIVISION OF PUBLIC WORKS

2371 South Avenue

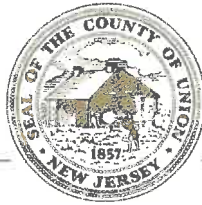
Scotch Plains, NJ 07076

(908)789-3660

fax(908)789-3227

www.ucnj.org

We're Connected to You!



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As required, there will be a “legal” (The Star Ledger) and a “display” (Westfield Leader) advertisement to be published in Union County newspapers from May through October. Municipalities are encouraged to share this information with all residents in their community.

Respectfully;


Sean Devaney, Bureau Chief
Bureau of Union County Mosquito Control

SD/lg

cc: Ed Oatman, Union County Manager

Joseph J. Policay, Jr., CPWM, Acting Director
Union County Dept. of Public Works and Facilities

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Adulticide Information

The adulticides that Union County will be using this year are;

Zenivex E-20, Fyfanon EW, Duet, DeltAgard, and ReMoa Tri. All have been used in the past year with satisfactory results in knocking down the adult Mosquito populations.

The labels for the adulticides, that Union County will be using this year are included in this packet and all required safety information is on the label.

The following Agencies listed below with telephone numbers are for quick reference. They can be contacted for more information.

| | |
|---|-----------------------|
| National Pesticide Information Center | 1-800-858-7378 |
| N.J. Poison Information & Education System | 1-800-222-1222 |
| NJDEP Pesticide Control Program | 1-609-984-6507 |
| USEPA Region 2 Office of Pesticides Program | 1-732-321-6759 |
| NJDEP Office of Mosquito Control Coordination | 1-609-292-3649 |
| Union County Bureau of Mosquito Control | 1-908-654-9834 |
| Rutgers University, Department of Entomology | 1-732-932-9437 |

UNION COUNTY

BUREAU OF MOSQUITO CONTROL

Fact Sheet

What is the life cycle of mosquitoes?

Mosquitoes have four stages of development; egg, larva, pupa and adult. They spend their larva and pupa stages in water. Female mosquitoes of most species deposit eggs on water or moist surfaces such as mud or fallen leaves. Rain re-floods these surfaces and stimulates the hatching of the eggs, starting the life cycle. Mosquito eggs that are laid on permanent water always hatch and develop larva. Depending on temperature, (warmer/faster-cooler/slower) it takes approximately one week to develop from egg to adult. Only female adult mosquitoes bite in order to obtain a blood meal. After emerging from the aquatic stages, adult mosquitoes mate and females seek a blood meal to obtain nutrients necessary for egg development. Adult male mosquitoes feed on plant nectar and die shortly after mating.

How many kinds of mosquitoes are there?

More than twenty species are currently identified here in Union County, with sixty three found in New Jersey. Fortunately, not all feed on humans.

What human diseases do mosquitoes transmit?

West Nile Virus (WNV), St. Louis (SLE) and Eastern Equine Encephalitis (EEE) are diseases that can be transmitted by mosquitoes found in New Jersey. The primary transmitter of WNV and SLE are mosquitoes commonly found around homes. They are mosquitoes that will readily breed in old tires or any containers left outside and in dumps that hold water. Both of these diseases are more dangerous to the very young and old or to individuals with compromised immune systems. EEE is a more dangerous disease and is transmitted by mosquitoes that breed in permanent swamps and salt water marshes. Other diseases that are in the news: Dengue, Chikungunya, Zika. To date, only

Dengue has been found in the U.S. as a domestically transmitted disease by mosquito.

What animal diseases do mosquitoes transmit?

Dogs, horses, and birds are susceptible to mosquito-born diseases. Dogs are threatened by filariasis (heartworms) which is transmitted by a bite from an infected mosquito. Once contracted, the treatment is costly and the disease can be fatal. There is preventative medicine that can protect your dog from contracting heartworms. See your veterinarian for more information. Horses are threatened by WNV and EEE as well as humans. Horses can be protected by a vaccine against EEE through your veterinarian. WNV in wild birds is a disease reservoir that mosquitoes transmit by biting an infected bird and then another host, be it human or animal. WNV has been responsible for the deaths of numerous birds, mostly in the wild bird population.

What is the function of the Bureau of Mosquito Control?

The Bureau of Mosquito Control was created in 1912 and has continued since then to provide the residents of Union County with quality mosquito control. The Bureau is part of the Union County Division of Public Works. The primary charge of Mosquito Control is to keep the population of mosquitoes as low as possible. By utilizing responsible modern methods, we provide vector-borne disease control and quality of life assurance from mosquitoes as pests. The Union County Bureau of Mosquito Control also participates in public outreach to educate Union County's residents regarding what they can do to prevent mosquito breeding and to protect themselves from being a host to a female mosquito bite.

What methods does Mosquito Control use?

The Bureau of Mosquito Control follows "Integrated Pest Management" (IPM) technique as a best practice for controlling the mosquito population in Union County. IPM uses water management (breeding source reduction), biocides, synthetic

at 908-654-9835 for details on the procedure to request individual notification.

What can I do if there are a lot of mosquitoes around my home?

Call our office at 908-654-9834 or 908-654-9835 to file a complaint regarding numerous mosquitoes presenting a nuisance. Our staff will promptly dispatch an Inspector to investigate the area around your home in order to determine if there are any breeding sites on the property and to verify the presence of adult mosquitoes. Portable mosquito traps may be set in order to get more information and to determine what course of action should be taken.

Are there any ways that I can control mosquitoes from breeding around my home?

Any open outdoor container that retains water can breed mosquitoes. Clogged roof gutters, old wheel-less tires, unmaintained swimming pools and flower pots all will collect organic material such as old leaves. These are attractive sites for breeding and tend to take a very long time to dry out. Natural depressions in your yard can also hold stagnant water and take a long time to dry up. Re-grade those areas to eliminate the puddles. Keep children's toys indoors or make sure to dump any water that they accumulate. Bird baths should have the water changed at least twice a week. Pet water bowls and flower pot saucers should be monitored as well. Have roof gutters checked and cleaned at the beginning of spring and at mid summer. Make sure window and door screens are properly fitted and repaired of any holes. Many repellants are available to provide relief from mosquitoes and other insects/pests. Always follow the instructions on the labels, and check with your family physician before applying any repellant to an infant or young child.

What does Mosquito Control do in the off-season?

At the end of the mosquito surveillance season, we compile our statistics and data. This information becomes part of the NJ Mosquito Control Agency data which is used to track trends and to keep historical data for future informational use. Mosquito

population counts and species, along with vector disease and locations, are recorded in order to inform the other agencies in New Jersey and for our next season alerts.

An IPM program includes the work needed to be performed in water management. Areas that were identified during the past season are worked on to improve water flow and cleaning of debris. Some areas require methods needing heavy equipment where our operators need to re-grade. Other areas need to be de-snagged and others still need to have vegetation cut back or removed to provide access for inspectors to treat known breeding sites that can't be eliminated. Equipment needs to be maintained or repaired for use in this work. We also repair any of the NJ Light Traps and get them ready to be re-deployed in the locations throughout Union County in May. All training and NJDEP recertification for all pesticide applicators takes place during the off season as well. All employees of Union County Mosquito Control, with the exception of our office clerk, are licensed by the New Jersey Department of Environmental Protection in pesticide application and are certified in the 8B category.

The Bureau of Mosquito Control begins Public Outreach at this time. Our education program is designed to be informative and enlightening as to the work we do here and the entomology of mosquitoes.

Additionally, the Inspectors are all Commercial Driver Licensed and are responsible for plowing a portion of Union County's roadways. Those same roads are our responsibility during leaf collection in the fall where some of our staff also hold the title of heavy equipment operator.

pesticides and education. Our control efforts focus primarily on the immature, water-born stages of the mosquito. The immature stages (larva/pupa) are more concentrated and accessible than adult mosquitoes and cannot escape control measures. Biocides containing *Bacillus thuringiensis israelensis* (BTI) dispersed in the water are used primarily to kill the larva, while surfactants (bio-degradable oils) applied on the water are used to suffocate pupa. Fathead minnows, killie fish, sunfish and *Gambusia* from the N.J. Division of Fish and Wildlife are stocked in ponds that are approved by the N.J. Department of Environmental Protection as part of a bio-control program. These fish eat mosquito larva. Our water management program identifies areas of stagnant water and eliminates them where possible following the NJDEP Best Management Practices manual. Mechanical and hand tools are used to accomplish this work which also includes the clearing of snags and silting from drainage ditches in order to eliminate standing pools of water. The Bureau deploys nearly thirty New Jersey Light Traps in order to monitor adult mosquito populations throughout the county. When those semi-permanent traps, which are collected two times a week from May to October, show significant numbers and when we receive complaints from neighborhoods, we spray a pesticide known as an adulticide. Adulticiding, which is mostly accomplished utilizing a truck mounted misting machine, is also done when we discover vector disease. All pesticides are registered with the U.S. Environmental Protection Agency and the N.J.D.E.P. Adulticiding is performed during the time of day when mosquitoes are most active, as the mosquitoes have to be on the wing and come into contact with the pesticide in order to be effective. The hours are usually between dusk and midnight, depending on the time of season which runs from June through September. At this time, all of the adulticiding is performed on the ground.

Where can I get additional information regarding adulticiding?

Adulticiding, or spraying, is advertised in legal ads in the Star Ledger and the Courier News. Residents can request individual notification of applications. Contact the Mosquito Control Bureau

| | | | |
|---------------|-------|----|-------------|
| FENPROPATHRIN | GROUP | 3A | INSECTICIDE |
| ABAMECTIN | GROUP | 6 | INSECTICIDE |



**FOR NON-CROP GROUND APPLICATIONS.
TRIPLE MODE OF ACTION INSECTICIDE TO PROVIDE
OPERATIONAL CONTROL OF BOTH SUSCEPTIBLE AND
PERMETHRIN-RESISTANT *Aedes* AND *Culex* MOSQUITOES.**

For use only by Federal, State, Tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category, or otherwise authorized by the State or Tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision, or as allowed by State regulations for persons treating private property.

Active Ingredients:

| | |
|--------------------------|---------------|
| Fenpropathrin | 4.0% |
| Abamectin | 1.5% |
| C-8910 | 14.0% |
| Other Ingredients | 93.5% |
| Total | 100.0% |

Contains 0.3 lbs of Fenpropathrin, 0.11 lbs of Abamectin and 0.08 lbs of C-8910 per gallon.

EPA Reg. No. 73049-526
EPA Est. No. 33762-IA-001

List No. A560205

INDEX:

- 1.0 First Aid
- 2.0 Precautionary Statements
 - 2.1 Hazard to Humans and Domestic Animals
 - 2.2 Physical or Chemical Hazards
 - 2.3 Personal Protective Equipment (PPE)
 - 2.4 User Safety Requirements
 - 2.5 User Safety Recommendations
 - 2.6 Environmental Hazards
- 3.0 Directions for Use
- 4.0 Application Instructions
- 5.0 Storage and Disposal
- 6.0 Notice To User: Warranty and Disclaimer Statement

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

1.0

| FIRST AID | |
|--|---|
| If swallowed | <ul style="list-style-type: none"> • Call a poison control center or doctor for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person. |
| 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. • Call a poison control center or doctor for immediate treatment advice. |
| HOT LINE NUMBER | |
| Have the product container label with you when calling a poison control center or doctor or going for treatment. For emergency medical treatment and or transportation emergency information contact 1-877-315-9819 or contact the National Pesticides Information Center (NPIC) at 1-800-858-7378, Monday through Friday, 8 AM to 12 PM PST, or at http://npic.orst.edu . For general information about this product, call 1-800-323-9597. | |

2.0 PRECAUTIONARY STATEMENTS

**2.1 HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Wear long-sleeved shirt and long pants, socks and shoes. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

2.2 Physical or Chemical Hazards

Combustible. Do not use or store near heat or open flame.

2.3 Personal Protective Equipment (PPE)

Mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks.

2.4 User Safety Requirements

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

2.5 User Safety Recommendations

Users should 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.

2.6 Environmental Hazards

This product is extremely toxic to fresh water and estuarine fish and invertebrates. Runoff from treated areas into a body of water may be hazardous to fish and aquatic invertebrates.

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow drift when bees are foraging the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a State, Tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes, or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the State or Tribe during a natural disaster recovery effort.

3.0 DIRECTIONS FOR USE

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

Before making the first application in a season, consult with the State or Tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.

Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes, or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body. Do not contaminate water when disposing of equipment rinsate or wash waters.

Resistance Management:

For resistance management, please note that ReMoa Tri, TRIPLE ACTION INSECTICIDE SPACE SPRAY (from here on simply indicated as ReMoa Tri) contains both Group 3A and Group 6 insecticides. Any insect population may contain individuals naturally resistant to ReMoa Tri and other Group 3A and Group 6 insecticides. The resistant individuals may dominate the insect population if these insecticides are used repeatedly in the same fields. Hence appropriate resistance-management strategies should be followed.

To delay insecticide resistance, take the following steps: Avoid application of more than 30 applications and consecutive sprays of ReMoa Tri or other insecticides in the same group in a year.

Adopt an integrated pest management program for insecticide use that includes scouting, uses historical information related to pesticide use, record keeping, and which considers cultural, biological and other chemical control practices.

Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.

Note: When applications require dilution, ReMoa Tri can only be diluted with manufacturer-provided diluent. ReMoa Tri cannot be diluted with water or any other diluent.

4.0 APPLICATION INSTRUCTIONS

ReMoa Tri can be applied as an Ultra-Low Volume (ULV), or non-thermal aerosol spray (cold fog) in mosquito adulticiding programs involving outdoor residential, urban, industrial, and recreational areas, to control adult mosquitoes.

Wide Area and Space Spray Application for Mosquito Control Over Non-Crop Areas

Do not apply more than 1.018 fl oz of ReMoa Tri per acre in any two-day period. Do not make more than 30 applications

per site per year (For a maximum rate 30.54 fl oz of ReMoa Tri per acre per year). More frequent applications per site may be made to prevent or control a threat to public and/or animal health determined by a State, Tribal or local health or vector control agency on the basis of documented evidence of disease-causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the State or Tribe during a natural disaster recovery effort.

Apply the product through a **ULV Fogger** (also known as ULV cold fogger), which is a piece of equipment designed to disperse pesticide chemicals in the air as a mist or fog.

Use ReMoa Tri for control of mosquitoes in: residential areas, industrial areas, urban areas (utility tunnels, sewers, storm drains and catch basins, pipe chases, basements, underground passages, parking decks, crawl spaces, or uninhabited buildings), parks, campsites, woodlands, athletic fields, golf courses, playgrounds, recreational and overgrown waste areas, roadsides, swamps, marshes, tidal areas, corrals, feed lots, swing lots, poultry ranges, zoos, animal quarters, barns, dumps, junkyards, tire dumps, and other areas where adult mosquitoes may be found. For best results, apply when insects are most active and meteorological conditions are conducive to keeping the spray cloud in the air column close to the ground. An inversion of air temperatures and a light breeze is preferable. Apply during the cooler hours of the night or early morning. Apply when wind speed is equal to or greater than 1 mph.

Droplet Size Determination for Ground Application Equipment

Spray equipment must be adjusted so that the volume median diameter (VMD) is between 8-30 microns ($8\mu \leq Dv0.5 \leq 30\mu$) and that 90% of the spray volume is contained in droplets smaller than 50 microns ($Dv 0.9 < 50\mu$). A laser-based measurement instrument, or a 'hot wire' based droplet analyzer such as KLD labs DC-IV system, must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

Ground ULV Application

Create an optimum swath when possible. An optimum swath width can be achieved when ReMoa Tri is applied from a truck that is being driven perpendicular to the wind direction. Direct the spray head of equipment to ensure even distribution of the spray cloud throughout the area.

- FOR BEST RESULTS treat when mosquitoes or insects are most active and weather conditions are conducive to keeping the spray cloud in the air column close to the ground.
- An inversion of air temperatures and a light breeze is preferable. Application during the cooler hours of the night or early morning is recommended.

To control mosquitoes and other listed insects, apply ReMoa Tri at a flow rate of 2.02 to 6.08 fluid ounces per minute at an average vehicle speed of 10 mph using a swath width of 300 feet for acreage calculations (see chart below). For best results, apply when mosquitoes are most active and meteorological conditions are conducive to keeping the spray cloud close to the ground. Do not apply in calm air conditions. Apply only when ground wind speed is greater than or equal to 1 mph. Conduct all types of applications at temperatures above 50°F. When targeting permethrin-resistant *Aedes* and *Culex* mosquitoes use a flow rate of 4.03 fluid ounces per minute at an average vehicle speed of 10 mph. If a different vehicle speed is used, adjust rate

accordingly. These rates are equivalent to 0.00080/0.00030/0.00020 to 0.00239/0.00089/0.00060 pounds of Fenpropathrin/Abamectin/C8910 respectively per air column acre. Vary flow rate according to vegetation density and mosquito population. Use higher flow rate in heavy vegetation or when populations are high. ReMoa Tri may also be diluted with the manufacturer's provided diluent (water or mineral oil should not be used as a diluent for ReMoa Tri) and applied by ground ULV equipment. Do not exceed 0.00239/0.00089/0.00060 pounds of Fenpropathrin/Abamectin/C8910 respectively per air column acre. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of ReMoa Tri. Use the following tables to calculate application rates:

Flow Rate Based on a 300-Foot Swath Width (Fluid Ounces Per Minute)

| Application Rates (Pounds of Fenpropathrin AI per Air Column Acre) | Application Rates (Pounds of Abamectin AI per Air Column Acre) | Application Rates (Pounds of C-8910 AI per Air Column Acre) | ReMoa Tri (fl oz Per Air Column Acre) | Vehicle Speed (MPH) | Undiluted | Diluted 1:0.5 | Diluted 1:1 | Diluted 1:2 |
|--|--|---|---|---------------------------|-----------|------------------|----------------|----------------|
| 0.0008 | 0.0003 | 0.0002 | 0.341 (Low) | 5 | 1.03 | 1.55 | 2.07 | 3.10 |
| | | | | 10 | 2.07 | 3.10 | 4.13 | 6.20 |
| | | | | 15 | 3.10 | 4.65 | 6.20 | 9.29 |
| | | | | 20 | 4.13 | 6.20 | 8.26 | 12.39 |
| 0.00157 | 0.00059 | 0.00039 | 0.669 (Mid) | 5 | 2.03 | 3.04 | 4.05 | 6.08 |
| | | | | 10 | 4.05 | 6.08 | 8.11 | 12.16 |
| | | | | 15 | 6.08 | 9.12 | 12.16 | 18.24 |
| | | | | 20 | 8.11 | 12.16 | 16.21 | 24.32 |
| 0.00239 | 0.00089 | 0.0006 | 1.018 (High) | 5 | 3.09 | 4.63 | 6.17 | 9.26 |
| | | | | 10 | 6.17 | 9.26 | 12.34 | 18.51 |
| | | | | 15 | 9.26 | 13.88 | 18.51 | 27.77 |
| | | | | 20 | 12.34 | 18.51 | 24.68 | 37.02 |

When targeting permethrin-resistant *Aedes* and *Culex* mosquitoes, or other difficult to control species of mosquitoes, use the mid to high label rate. ReMoa Tri can not exceed the maximum rates of active ingredient per air column acre listed above.

5.0 STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a cool, dry place.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of onsite or at an approved waste disposal facility.

Container Disposal: Non-refillable 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 1/4 full with mineral oil and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

6.0 NOTICE TO USER: WARRANTY AND DISCLAIMER STATEMENT

To the extent consistent with applicable law, seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on the label. To the extent consistent with applicable law, user assumes all risks of use, storage or handling not in strict accordance with accompanying directions.

ReMoa Tri is a trademark of Valent BioSciences LLC
©2023

Registrant:
Valent BioSciences LLC
1910 Innovation Way, Suite 100
Libertyville, IL 60048, U.S.A.
1-800-323-9597

44-1044/R1 (Pkg. 99-1803/R2 B)

SPECIMEN

ReMoa Tri

SDS# VBC-0586 Revision 10

ISSUED 03/28/2023

[Classification according to OSHA; 29 CFR § 1910.1200, (3/12/2012)]

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY**1.1 Product Identifier****MATERIAL NAME:** ReMoa Tri, Triple Action Insecticide Space Spray**Synonyms:** VBC-60748 Insecticide**EPA Reg No.:** 73049-526**Code Number:** N/A**List Number:** N/A**Chemical Family:** Pyrethroid and macrocyclic lactone**Substance Registration Number(s)[REACH]:** N/A**1.2 Relevant Identified Uses and Uses Advised Against****Identified Uses:** Mosquito spray over urban areas**Uses Advised Against:****1.3 Details of the supplier of the Safety Data Sheet****Supplied By:** Valent BioSciences LLC

1910 Innovation Way, Suite 100

Libertyville, Illinois 60048

1.4 EMERGENCY TELEPHONE NUMBERS**Emergency Health or Spill:**

VBC Product Information: (800)323-9597

Health Emergency (24 hours): 800-892-0099

Transportation (24 hr): CHEMTREC: 800-424-9300

2. HAZARDS IDENTIFICATION**2.1 Classification of the Substance or Mixture**

Combustible Liquid (Category 4)

Acute toxicity - Oral (Category 4)

Specific target organ toxicity - single exposure - (Category 3)

Specific target organ toxicity - repeat exposure (Nervous System) - (Category 2)

2.2 Labeling Elements**Symbol(s)**



SAFETY DATA SHEET

2 of 11

ReMoa Tri

SDS# VBC-0586 Revision 10

ISSUED 03/28/2023

[Classification according to OSHA; 29 CFR § 1910.1200, (3/12/2012)]

Signal Word

WARNING

Hazard Statement(s)

Harmful if swallowed

Causes damage to the nervous system

Causes damage to nervous system through prolonged or repeated exposure

Combustible liquid

Precautionary Statements:

Prevention

Wash hands and face thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves and clothing.

Wear protective eyewear.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

Take precautionary measures against static discharge.

Avoid breathing dust, gas, mist, vapors or spray.

Response

In case of fire: Use water fog, carbon dioxide or dry chemical to extinguish.

If SWALLOWED: Call a poison control center or doctor.

Rinse mouth.

If EXPOSED: Call a poison control center or doctor.

Get medical advice/attention if you feel unwell.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other Hazards

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

| CAS # | Ingredients | Percent |
|------------|-------------------|---------|
| 39515-41-8 | Fenpropathrin | 4.0 |
| 71751-41-2 | Abamectin | 1.5 |
| | Other Ingredients | 94.5 |



SAFETY DATA SHEET

3 of 11

ReMoa Tri

SDS# VBC-0586 Revision 10

ISSUED 03/28/2023

[Classification according to OSHA; 29 CFR § 1910.1200, (3/12/2012)]

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

GENERAL: In all cases of doubt, seek medical attention.

INHALATION: Using proper respiratory protection, immediately remove victim to fresh air and keep at rest in a position comfortable for breathing. Provide symptomatic/supportive care as necessary. Administer artificial respiration if breathing is stopped.

SKIN: Remove from source of exposure. Take off contaminated clothing. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

EYES: Rinse with water as soon as possible and rinse cautiously for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention. Provide symptomatic /supportive care as necessary.

INGESTION: Rinse mouth. Do NOT induce vomiting. Do not give victim anything to drink if he/she is unconscious. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice/attention.

4.2 Most important Symptoms and Effects, both Acute and Delayed

Acute

Tremors

Delayed

Tremors

NOTE TO PHYSICIAN:

• Early signs of intoxication include mydriasis (dilated pupils), ataxia (unsteadiness), and muscle tremors. Toxicity follows accidental ingestion of Abamectin and can be minimized by promptly administering activated charcoal.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

Treat symptomatically and supportively

5. FIRE FIGHTING PROCEDURES

5.1 Extinguisher Media

Suitable Extinguisher Media

CAUTION: Carbon dioxide will displace air in confined spaces and may create an oxygen deficient atmosphere. Use water fog, carbon dioxide or dry chemical.



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Unsuitable Extinguisher Media

DO NOT use a solid stream of water directly on the fire as the water may spread the fire to a larger area.

5.2 Specific Hazards Arising from the Chemical

COMBUSTIBLE LIQUID. Vapors are heavier than air. Vapors may settle in low or confined areas, or travel long distances along the ground or surface to an ignition source where they may ignite, flashback, or explode. Keep away from heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment). Contact with strong oxidizing agents may cause fire. Rags soaked in solvent can present a fire hazard and should be stored in UL listed or Factory Mutual approved, covered containers. Improperly stored rags, under certain conditions can lead to spontaneous combustion.

Thermal decomposition products

Carbon oxides, nitrogen oxides

5.3 Advice to Firefighters

Protective Equipment and precautions for firefighters

Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers and disperse vapors. CAUTION: Spilled material is slippery.

Fire & Explosive hazard

Inhalation, ingestion or contact with vapors or substance may cause irritation. Containers may explode when heated. Runoff and fire-control water may pollute waters.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

COMBUSTIBLE LIQUID. Eliminate all sources of ignition. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit.

6.2 Environmental Precautions

Keep out of drains, sewers, ditches and waterways. Avoid runoff to waterways and sewers. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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6.3 Methods and Materials for Containment and Cleaning Up

Contain spill, place into drums for proper disposal. Soak up residue with non-flammable absorbent material. DO NOT use sawdust or other cellulose-type material. Place in non-leaking containers for immediate disposal. Flush remaining area with water to remove trace residue and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

6.4 Reference to Other Sections

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations. See Section 13 for Disposal Considerations.

US Regulations may require reporting spills of hazardous materials: See Section 15: Regulatory Information for details on reportable quantities, if any.

7. HANDLING AND STORAGE**7.1 Precautions for Safe handling**

Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. Always open containers slowly to allow any excess pressure to vent. Use non-sparking tools and equipment. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

7.2 Conditions for Safe Storage

COMBUSTIBLE LIQUID. Store in a cool, well ventilated area away from all sources of ignition and out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground transfer containers and equipment. Protect containers against physical damage.

Incompatibilities

Avoid contact with heat, sparks, electric arcs, other hot surfaces, and open flames. Avoid other ignition sources.

7.3 Specific End Use(s)

Experimental Use Only by qualified researchers.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Component Exposure Limits (Note: Exposure limits are not additive)

| Component | CAS-No. | Value | Basis |
|-----------|----------|--------------------------|-------------------|
| BHT | 128-37-0 | TWA 10 mg/m ³ | OSHA. ACGIH (TLV) |

8.2 Exposure Controls

Appropriate Engineering Controls

Provide general ventilation. Where adequate general ventilation is unavailable use process enclosure, local exhaust ventilation, or other engineering controls.

SKIN PROTECTION: Wear protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear PVC, Viton, Nitrile gloves (AS2161).

EYE PROTECTION: Use chemical safety goggles and/or a full face shield where splashing is possible.

RESPIRATORY PROTECTION: Wear a dust/mist respirator if needed.

Specific Hygiene Measures: Avoid contact with skin and eyes. Do not eat, drink or smoke during work. Wash thoroughly after handling and before eating or drinking. Contaminated work clothing should not be allowed out of the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---------------------------------|-----------------------------------|--------------------------------|---|
| Appearance: | Liquid | Odor: | Not Determined |
| pH: | 4.8 - 5.2 | Color: | Clear Light Yellow to Tan |
| Melting Point: | Not Determined | Boiling Point: | Not Determined |
| Specific Gravity: | Not Determined | Solubility (H ₂ O): | Not Determined |
| Density: | .916 g/cm ³ at 20.00°C | Evaporation Rate: | Not Determined |
| Octanol/H ₂ O Coeff: | Not Determined | Decomposition Temp.: | Not Determined |
| Auto Ignition: | 245°C | Flammability Class: | Not Determined |
| Flash Point: | 62°C – 65°C | LFL: | Not Determined |
| Vapor Density: | Not Determined | UFL: | Not Determined |
| VOC: | Not Determined | Vapor Pressure: | Not Determined |
| Kinematic Viscosity: | Not Determined | Oxidation or Reduction Action | No significant oxidizing or reducing action or chemical incompatibility |

10. CHEMICAL STABILITY AND REACTIVITY

10.1 Reactivity

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Stable under ordinary conditions of use and storage.

10.2 Chemical Stability

Stable under ordinary conditions of use and storage.

10.3 Possibility of Hazardous Reactions

Does not undergo hazardous polymerization.

10.4 Conditions to Avoid

Ignition sources (open flame, spark, heat, hot surface, static discharge, etc.), incompatibles, heating accumulation of static electricity

10.5 Incompatible Materials

Strong oxidizers, strong bases and strong acids.

10.6 Hazardous Decomposition Products

Carbon monoxide, carbon dioxide.

11. TOXICOLOGICAL INFORMATION**11.1 Information on Toxicological Effects**

Product (and or TGA) Toxicology

Acute Effects

Oral: LD₅₀ 1030 mg/kg

Dermal: LD₅₀ >5000 mg/kg

Inhalation: LC₅₀ > 5.57 mg/L in male and female rats.

Eye Irritation: Minimally irritating; cleared by 48hrs

Skin Irritation: Slightly irritating; cleared by day 7

Skin Sensitization: Not a contact sensitizer

12. ECOLOGICAL INFORMATION**12.1 Ecotoxicity**

This product has not been tested for eco-toxicological effects. Treat with extreme caution and do not allow into waterways or lakes.

12.2 Persistence and Degradability

Environmental persistence and fate not evaluated.

12.3 Bioaccumulation potential

No data available



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12.4 Mobility in Soil

No data available

12.5 Results of PBT and vPvB assessment

Assessments not performed

12.6 Other adverse effects

None known

13. DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Methods

Dispose of product in accordance with federal, state, provincial, and local regulations. Prevent contamination of environment by wastes.

US EPA WASTE NUMBER & DESCRIPTIONS:

There is no applicable EPA waste number. This product, if discarded, is not expected to be a characteristic or listed hazardous waste.

14. TRANSPORTATION INFORMATION

DOT STATUS: Regulated

UN PROPER SHIPPING NAME: NA1993 Combustible liquids n.o.s (Contains Ethyl Lactate Solution), 3, III

REMARKS: NOT REGULATED FOR DOMESTIC GROUND TRANSPORT BY US DOT FOR NON-BULK SHIPMENTS OF LESS THAN 450 LITERS (119 GALLONS): SEE 49 CFR 173.150(f)(2).

IATA/ICA0 STATUS: Not-Regulated

PROPER SHIPPING NAME: N/A

REMARKS: N/A

IMDG STATUS: Not-Regulated

PROPER SHIPPING NAME: N/A

REMARKS: N/A

15. REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations / Specific Legislation

TSCA STATUS: Not Listed

CERCLA STATUS: Not regulated as hazardous



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SARA STATUS: Acute: No Chronic: No Fire: No CDT: No
RCRA STATUS: Not regulated as hazardous

Consult applicable national, state provincial or local laws to determine regulations, laws or ordinances which may be applicable.

State Right-To-Know:

Massachusetts Right To Know Components

2,6-Di-Tert-Butyl-P-Cresol CAS-No.:128-37-0

Pennsylvania Right To Know Components

2,6-Di-Tert-Butyl-P-Cresol CAS-No.: 128-37-0

Abamectin CAS-No.: 71751-41-2

Ethyl L-lactate CAS No.: 687-47-8

New Jersey Right To Know Components

2,6-Di-Tert-Butyl-P-Cresol CAS-No.: 128-37-0

Abamectin CAS-No.: 71751-41-2

Ethyl L-lactate CAS No.: 687-47-8

15.2 FIFRA – Pesticide Labeling

EPA : CAUTION

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

Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Wear long-sleeved shirt and long pants, socks and shoes. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Physical or Chemical Hazards

Combustible. Do not use or store near heat or open flame.

Environmental Hazards

This pesticide is extremely toxic to aquatic organisms. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to aquatic organisms.

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow drift when bees are foraging the treatment area, except when applications are made to prevent or control a threat to public and / or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes, or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.



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STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a cool, dry place.

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: [For 2.5-gallon Jugs]: Non-refillable 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 1/4 full with mineral oil and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

[For refillable drums & totes]: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: N/D
Flammability: Combustible
Instability: N/D

HMIS Hazard Ratings

Health: N/D
Flammability: N/D
Instability: N/D

0 = minimal
1 = slight
2 = moderate
3 = serious
4 = Extreme

REASON FOR ISSUE: Updated section 14.

APPROVAL DATE: 03/28/2023



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SUPERSEDES DATE: 08/12/2022

LEGEND: N/A = Not Applicable

N/D = Not Determined

N/L = Not Listed

L = Listed

C = Ceiling

S = Short-term

(R) = Registered Trademark of Valent BioSciences LLC

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This Safety Data Sheet (SDS) may provide more information than the product label but does not replace or modify the product labeling (attached to and accompanying the product container). The product SDS and the product label both provide consistent and important health, safety, and environmental information as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom"). This requirement covers employers, employees, emergency responders, users and others handling the product. All necessary hazard classification and appropriate precautionary, use, storage, and disposal information is set forth on the labeling and the SDS.



1910 Innovation Way, Suite 100
Libertyville, IL 60048

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This document is for informational purposes only. Please read and follow label directions on the product container and verify state registration in your state before using, selling or distributing.



DeltA Gard®

Insecticide

[Mosquito Image]

FOR WIDE AREA MOSQUITO CONTROL USE ONLY BY FEDERAL, STATE, TRIBAL, OR LOCAL GOVERNMENT OFFICIALS RESPONSIBLE FOR PUBLIC HEALTH OR VECTOR CONTROL, OR BY PERSONS CERTIFIED IN THE APPROPRIATE CATEGORY, OR OTHERWISE AUTHORIZED BY THE STATE OR TRIBAL LEAD PESTICIDE REGULATORY AGENCY TO PERFORM ADULT MOSQUITO CONTROL APPLICATIONS, OR BY PERSONS UNDER THEIR DIRECT SUPERVISION, OR AS ALLOWED BY STATE REGULATIONS FOR PERSONS TREATING PRIVATE PROPERTY.

FOR THE CONTROL OF FLIES AND MOSQUITOES IN AND AROUND POULTRY AND LIVESTOCK FACILITIES.

- Provides Quick Knockdown and Effective Control of Mosquitoes, Flies, Gnats, and Non-Biting Midges
- A FFAST™ Formulation
- May be Applied Undiluted or Diluted in Water

ACTIVE INGREDIENT:

Deltamethrin 2.0 %

OTHER INGREDIENTS : 98.0%

TOTAL : 100.0%

Contains 0.17 pounds of Deltamethrin per gallon

EPA Reg. No. 432-1534

EPA Est. No. _____

PRECAUCION AL CONSUMIDOR: Si usted no lee Ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

(TO THE USER: If you cannot read English, do not use this product until the label has been fully explained to you.)

KEEP OUT OF REACH OF CHILDREN
CAUTION

See Side Panel For Additional Precautionary Statements

For MEDICAL and TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-334-7577

For PRODUCT USE Information, Call 1-800-331-2867

FIRST AID

| | |
|--|--|
| If swallowed | <ul style="list-style-type: none">• Call a poison control center or doctor for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything to an unconscious person. |
| 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.• Call a poison control center or doctor for immediate treatment advice. |
| Have the product container or label with you when calling a poison control center or doctor, or going for treatment. | |

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment (PPE)

Mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

User Safety Requirements

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

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

This product is extremely toxic to fresh water and estuarine fish and invertebrates. Runoff from treated areas into a body of water may be hazardous to fish and aquatic invertebrates.

Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes, or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body. Do not contaminate water when disposing of equipment rinsate or wash waters.

When used for mosquito adulticiding;

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow drift when bees are foraging the treatment area, except when applications are made to prevent or control a threat to public and / or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes, or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

When applied outdoors for fly control;

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow drift when bees are foraging the treatment area.

DIRECTIONS FOR USE

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

Do not apply by aircraft.

Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.

SHAKE OR AGITATE THOROUGHLY BEFORE USE: Product (either diluted or undiluted) must be thoroughly agitated before use. Avoid prolonged storage of excess formulation in application equipment.

NOTICE: This concentrate is for dilution with water only; it cannot be diluted in oil.

APPLICATION INSTRUCTIONS

This product is recommended for application with hand-held, backpack, portable & truck mounted ULV sprayers and portable and vehicle mounted mist-blowers for wide area applications, to control adult mosquitoes, black flies, gnats, and non-biting midges, stable flies, horse flies, deer flies, sheep flies, horn flies, and nuisance flying insects such as houseflies or blow flies.

WIDE AREA AND SPACE SPRAY APPLICATION FOR MOSQUITO CONTROL OVER NON CROP AREAS

Do not exceed 0.036 pounds of AI per acre per year to any site. During any three day period do not apply more than 0.00134 lb a.i./A. Do not make more than 25 applications per site per year. More frequent applications and more than 25 applications per site may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

DeltaGard Insecticide is approved for application as an Ultra-Low Volume (ULV) aerosol to control flying or resting adult mosquitoes in residential, industrial, urban, recreational, and municipal areas where adult mosquitoes are found. This product is used for control of mosquitoes in areas such as residential areas, industrial areas, urban areas (such as utility tunnels, sewers, storm drains and catch basins, pipe chases, basements, underground passages, parking decks, crawl spaces, or uninhabited buildings), parks, campsites, woodlands, athletic fields, golf courses, playgrounds, recreational and overgrown waste areas, roadsides, swamps, marshes, tidal areas, corrals, feed lots, swine lots, poultry ranges, zoos, animal quarters, barns, dumps, junkyards, tire dumps, and other areas where adult mosquitoes may be found.

If treatments are made with animals present, the maximum number of applications per year depends on the application rate used; 10 applications at 0.00134 lb a.i./A, 15 applications at 0.00089 lb a.i./A, or 30 applications at 0.00045 lb a.i./A.

For best results, apply when insects are most active and meteorological conditions are conducive to keeping the spray cloud in the air column close to the ground. An inversion of air temperatures and a light breeze is preferable. Application during the cooler hours of the night or early morning is recommended. Apply when wind speed is equal to or greater than 1 mph.

APPLICATIONS OVER CROPS OR TO AREAS FAVORING DRIFT OVER CROPS

This product may be applied over any and all crops or agricultural areas, (including row, tree, fruit, citrus, pasture, rangeland, and other areas where agricultural enterprises take place) for the control of adult mosquitoes within or adjacent to the treatment areas, or to areas where drift over cropland could occur. Use label rates and follow directions for use as directed in this label. Applications over crops or where drift may occur over crops are limited to 0.0134 lb ai per acre per year, with no more than one application in any three day interval. Maximum number of applications per year depends on the application rate used; 10 applications at 0.00134 lb a.i./A, 15 applications at 0.00089 lb a.i./A, or 30 applications at 0.00045 lb a.i./A. More frequent applications and more than 0.0134 lb. ai per acre per year per site may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

DROPLET SIZE DETERMINATION FOR GROUND APPLICATION EQUIPMENT

This proprietary FFAST (Film Forming Aqueous Spray Technology) formulation greatly reduces the evaporation rate of water from the sprayed droplets and allows the water-based spray cloud to behave as that produced by a typical oil-based formulation. This enables the spray droplets to maintain optimum size and stability while drifting through the target area.

Spray equipment must be adjusted so that the volume median diameter (VMD) is between 8 - 30 microns ($8\mu \leq D_{v0.5} \leq 30\mu$) and that 90% of the spray is contained in droplets smaller than 50 microns ($D_{v0.9} < 50\mu$). Directions from the equipment manufacturer or vendor or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

ULV NON-THERMAL AEROSOL (COLD FOG):

Apply through any non-thermal ULV application equipment capable of producing the required droplet spectrum. Base acreage calculations on the equipment manufacturer's recommended swath width. Apply at a rate not to exceed 0.00134 pounds of deltamethrin per acre in any given 3 day interval. An optimum swath is created when this product is applied from a truck that is being driven perpendicular to the wind direction. Direct the spray head of equipment to ensure even distribution of the spray cloud throughout the area.

This product may be applied through ULV Cold Aerosol Generators, or other equipment designed for non-thermal ULV aerosol applications. The desired application rate may be obtained under different conditions by altering the dilution rate of this product, the flow rate of the insecticide from the application equipment and the vehicle speed. Examples are given in the following table:

Flow Rate based on a 300 foot swath width (Fluid Ounces Per Minute)

| Application Rate (lb deltamethrin/Acre) | Vehicle Speed (MPH) | Undiluted | Diluted 1 + 1 | Diluted 1 + 2 | Diluted 1 + 3 | Diluted 1 + 4 |
|---|---------------------|-----------|---------------|---------------|---------------|---------------|
| 0.00045 | 5 | 1.01 | 2.02 | 3.03 | 4.04 | 5.05 |
| | 10 | 2.02 | 4.04 | 6.06 | 8.08 | 10.11 |
| | 15 | 3.03 | 6.06 | 9.10 | 12.13 | 15.16 |
| | 20 | 4.04 | 8.08 | 12.13 | 16.17 | 20.21 |
| 0.00089 | 5 | 2.02 | 4.04 | 6.06 | 8.08 | 10.11 |
| | 10 | 4.04 | 8.08 | 12.13 | 16.17 | 20.21 |
| | 15 | 6.06 | 12.13 | 18.19 | 24.25 | 30.32 |
| | 20 | 8.08 | 16.17 | 24.25 | 32.34 | 40.42 |
| 0.00134 | 5 | 3.04 | 6.09 | 9.13 | 12.17 | 15.22 |
| | 10 | 6.09 | 12.17 | 18.26 | 24.34 | 30.43 |
| | 15 | 9.13 | 18.26 | 27.39 | 36.52 | 45.65 |
| | 20 | 12.17 | 24.34 | 36.52 | 48.69 | 60.86 |

Where dense vegetation or a public health emergency is present, the use of the highest label rate is recommended.

When targeting organophosphate resistant or other difficult to control species of mosquitoes or flies use of the high label rate is recommended.

PORTABLE, BACKPACK OR HAND CARRIED ULV APPLICATION: Apply through non-thermal ULV application equipment and base acreage calculations on a 50 foot swath. At a pace of 2 MPH (2.9 ft/sec) apply 1 ounce per minute of DeltaGard Insecticide diluted as follows: for an application rate of 0.00045 pounds of Deltamethrin per acre dilute 1 to 14, for an application rate of 0.00089 pounds of deltamethrin per acre dilute 1 to 6.5, for an application rate of 0.00134 pounds of deltamethrin per acre dilute 1 to 4. Based on the above dilution and application rates apply 5 ounces of diluted product while walking 870 feet (290 yards).

APPLICATION FOR FLY CONTROL

DeltaGard Insecticide is approved for application as an Ultra-Low Volume (ULV) aerosol to control flying or resting adult flies in residential, industrial, urban, recreational, and municipal areas where flies are found. This product is used for control of flies in areas such as residential areas, industrial areas, urban areas (such as utility tunnels, sewers, storm drains and catch basins, pipe chases, basements, underground passages, parking decks, crawl spaces, or uninhabited buildings), parks, campsites, woodlands, athletic fields, golf courses, playgrounds, recreational and overgrown waste areas, roadsides, swamps, marshes, tidal areas, corrals, feed lots, swine lots, poultry ranges, zoos, animal quarters, barns, dumps, junkyards, tire dumps, and other areas where adult mosquitoes and flies may be found.

This product is recommended for application with hand-held, backpack, portable & truck mounted ULV sprayers and portable and vehicle mounted mist-blowers for area applications, to control, black flies, gnats, non-biting midges, stable flies, horse flies, deer flies, sheep flies, horn flies, and nuisance pests such as face flies or blow flies. Spray equipment must be adjusted so that the volume median diameter (VMD) is between 8 - 30 microns ($8\mu \leq Dv0.5 \leq 30\mu$) and that 90% of the spray is contained in droplets smaller than 50 microns ($Dv 0.9 < 50\mu$).

For the treatment of livestock and poultry facilities (e.g., cattle, dairy and livestock barns, goat houses, horse stables/barns, loafing sheds, poultry houses, shade houses, stables, swine houses, feedlots, manure piles, swine yards, corrals, stockyards, holding pens and other animal facilities) where flies become pests and quick knockdown is needed.

This product may be applied undiluted, but to maximize efficacy against larger fly species (e.g., blow flies, filth flies) it is recommended to dilute in water (1 + 1) before application, increasing the droplet density in the ULV cloud.

Indoors, reduce air movement as much as possible before applying by closing doors, windows and other openings; if animals are present, ventilate the treated area immediately following application. When treating indoors, cover any exposed drinking water, drinking fountains, and animal feed before application. Outdoors, apply when insects are most active, usually in late afternoon when there is little wind. Pay particular attention to areas where flies congregate, such as around feed bunks, fences, and on the exterior walls of buildings. Animals may be present during treatment.

If treatments are made with animals present, the maximum number of applications per year depends on the application rate used; 10 applications at 0.00134 lb ai/A, 15 applications at 0.00089 lb ai/A, or 30 applications at 0.00045 lb ai/A.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE AND SPILL PROCEDURES: Store upright at room temperature. Avoid exposure to extreme temperatures. In case of spill or leakage, soak up with an absorbent material such as sand, sawdust, earth, fuller's earth, etc. Dispose of with chemical waste.

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

Container Handling:

Rigid, Non-refillable containers small enough to shake (i.e., with capacities equal to or less than 5 gallons)

Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure 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 1/4 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. Then offer for recycling or reconditioning 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.

Rigid Non-refillable containers that are too large to shake (i.e., with capacities greater than 5 gallons or 50 pounds)

Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling or reconditioning 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.

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

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, 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 Bayer CropScience LP. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer CropScience LP is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

LIMITATIONS OF LIABILITY: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER CROPSCIENCE LP'S ELECTION, THE REPLACEMENT OF PRODUCT.

DeltaGard is a registered trademark and FFAST is a trademark of the Bayer Group

Net Contents:

PRODUCED FOR



Bayer Environmental Science

Bayer Environmental Science
A Division of Bayer CropScience LP
PO BOX 12014, 2 T. W. Alexander Drive
Research Triangle Park, NC 27709

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If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Specific measures (see supplemental first aid instructions on this label).
Wash contaminated clothing before reuse.
Dispose of contents/container in accordance with local regulation.

Other hazards
No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Component Name | CAS-No. | Average % by Weight |
|----------------------------|------------|---------------------|
| Deltamethrin | 52918-63-5 | 2.00 |
| Trade Secret Ingredient(s) | | 31.35 |

Identity and specific percent composition of one or more Trade Secret materials is being withheld.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

| | |
|----------------|---|
| General advice | When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment. |
| Inhalation | Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately. |
| Skin contact | Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately. |
| Eye contact | 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 physician or poison control center immediately. |
| Ingestion | Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended. |

Most important symptoms and effects, both acute and delayed

| | |
|--|---|
| Symptoms | No symptoms known or expected. |
| Indication of any immediate medical attention and special treatment needed | |
| Treatment | Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote. |

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SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable

Water spray, Foam, Carbon dioxide (CO₂), Dry chemical

Unsuitable

None known.

Special hazards arising from the substance or mixture

Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for firefighters

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further Information

Fight fire from upwind position. Keep out of smoke. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point

no data available

Autoignition temperature

no data available

Lower explosion limit

no data available

Upper explosion limit

no data available

Explosivity

not applicable

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions

Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice

Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

Reference to other sections

Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

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SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Use only in area provided with appropriate exhaust ventilation. Ensure adequate ventilation.

Hygiene measures

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

| Components | CAS-No. | Control parameters | Update | Basis |
|--------------|------------|---------------------------------|--------|----------|
| Deltamethrin | 52918-63-5 | 0.02 mg/m ³ (TWA) | | OES BCS* |

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Additional advice

This product contains material which are Trade Secret and may have Occupational Exposure Limits.

Exposure controls

Personal protective equipment

In normal use and handling conditions, please refer to the label and/or leaflet. In all other cases the following recommendations would apply:

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection

Chemical resistant nitrile rubber gloves

Eye protection

Safety glasses with side-shields

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.

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Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|------------------------|
| Appearance | white |
| Physical State | emulsion |
| Odor | characteristic |
| Odour Threshold | no data available |
| pH | 5.0 - 8.0 at 100 % |
| Vapor Pressure | no data available |
| Vapor Density (Air = 1) | no data available |
| Density | 1.02 g/cm ³ |
| Evaporation rate | no data available |
| Boiling Point | no data available |
| Melting / Freezing Point | no data available |
| Water solubility | dispersible |
| Minimum Ignition Energy | not applicable |
| Decomposition temperature | not applicable |
| Partition coefficient: n-octanol/water | no data available |
| Viscosity | 135 - 500 mPa.s |
| Flash point | no data available |
| Autoignition temperature | no data available |
| Lower explosion limit | no data available |
| Upper explosion limit | no data available |
| Explosivity | not applicable |

SECTION 10: STABILITY AND REACTIVITY

| | |
|------------------------------------|---|
| Reactivity | |
| Thermal decomposition | not applicable |
| Chemical stability | Stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |

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| | |
|----------------------------------|--|
| Conditions to avoid | no data available |
| Incompatible materials | no data available |
| Hazardous decomposition products | No decomposition products expected under normal conditions of use. |

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes Inhalation, Ingestion, Eye contact

Immediate Effects
Eye Causes eye irritation.

Ingestion Harmful if swallowed.

Information on toxicological effects

| | |
|---------------------------|---|
| Acute oral toxicity | LD50 (rat) 3,129 mg/kg |
| Acute inhalation toxicity | LC50 (rat) > 5.07 mg/l Exposure time: 4 h |
| Acute dermal toxicity | LD50 (rabbit) > 5,000 mg/kg |
| Skin irritation | No skin irritation (rabbit) |
| Eye irritation | Mild eye irritation. (rabbit) |
| Sensitisation | Sensitising (mouse) OECD Test Guideline 429, local lymph node assay (LLNA) |

Assessment repeated dose toxicity

Deltamethrin caused neurobehavioral effects and/or neuropathological changes in animal studies. The toxic effects of Deltamethrin are related to transient hyperactivity typical for pyrethroid neurotoxicity.

Assessment Mutagenicity

Deltamethrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Deltamethrin was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

None.

NTP

None.

IARC

Deltamethrin

52918-63-5

Overall evaluation: 3

OSHA

None.

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Assessment toxicity to reproduction

Deltamethrin did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Deltamethrin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Deltamethrin are related to maternal toxicity.

Further Information

Only acute toxicity studies have been performed on the formulated product.
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

| | |
|-----------------------------------|---|
| Toxicity to fish | LC50 (Rainbow trout (<i>Oncorhynchus mykiss</i>)) 0.00091 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient deltamethrin. |
| Toxicity to aquatic invertebrates | EC50 (Water flea (<i>Daphnia magna</i>)) 0.00056 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient deltamethrin. |
| Toxicity to aquatic plants | EC50 (Algae) > 9.1 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient deltamethrin. |
| Biodegradability | Deltamethrin: ; not rapidly biodegradable |
| Koc | Deltamethrin: Koc: 10240000 |
| Bioaccumulation | Deltamethrin: Bioconcentration factor (BCF) 1,400; Does not bioaccumulate. |
| Mobility in soil | Deltamethrin: Immobile in soil |
| Environmental precautions | Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. |

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product

Dispose in accordance with all local, state/provincial and federal regulations.

Contaminated packaging

Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.
If burned, stay out of smoke.
Follow advice on product label and/or leaflet.

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RCRA Information

Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR

Not dangerous goods / not hazardous material

IMDG

| | |
|----------------------|---|
| UN number | 3082 |
| Class | 9 |
| Packaging group | III |
| Marine pollutant | YES |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DELTAMETHRIN SOLUTION) |

IATA

| | |
|--------------------------|---|
| UN number | 3082 |
| Class | 9 |
| Packaging group | III |
| Environm. Hazardous Mark | YES |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DELTAMETHRIN SOLUTION) |

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15: REGULATORY INFORMATION

This product contains material(s) which are Trade Secret and are on various Regulatory Lists. These material(s) are not listed below.

US Federal Regulations

TSCA List

None.

US: Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

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This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients
None.

Canadian Regulations
Canadian Domestic Substance List
None.

Environmental
CERCLA
None.
Clean Water Section 307 Priority Pollutants
None.
Safe Drinking Water Act Maximum Contaminant Levels
None.

International Regulations
European Inventory of Existing Commercial Substances (EINECS)
Deltamethrin 52918-63-5

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution

Hazard statements: Keep out of the reach of children.
Harmful if swallowed.
Causes eye irritation.
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

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Reason for Revision: Reviewed and updated for general editorial purposes. The following sections have been revised: Section 2: Hazards Identification, Section 3: Composition / Information on Ingredients, Section 11: Toxicological Information, Section 12, Ecological Information, Section 14: Transport Information.

Revision Date: 04/04/2014

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.



Fyfanon[®] EW

Insecticide

FOR USE ONLY BY FEDERAL, STATE, TRIBAL, OR LOCAL GOVERNMENT OFFICIALS RESPONSIBLE FOR PUBLIC HEALTH OR VECTOR CONTROL, OR BY PERSONS CERTIFIED IN THE APPROPRIATE CATEGORY OR OTHERWISE AUTHORIZED BY THE STATE OR TRIBAL LEAD PESTICIDE REGULATORY AGENCY TO PERFORM ADULT MOSQUITO CONTROL APPLICATIONS, OR BY PERSONS UNDER THEIR DIRECT SUPERVISION.

Kills mosquitoes
Reduces mosquito populations
May be Applied Undiluted or Diluted with Water
Low odor

EPA Reg. No. 279-3622 EPA Est. No. 4787-DNK-001

| | |
|------------------------------|--------|
| ACTIVE INGREDIENT: | By Wt. |
| Malathion [*] | 40.9% |
| OTHER INGREDIENTS:..... | 59.1% |
| TOTAL..... | 100.0% |

*O,O-dimethyl phosphorodithioate of diethyl mercaptosuccinate
Contains 3.67 lbs malathion per gallon

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

IN CASE OF A MEDICAL EMERGENCY INVOLVING THIS
PRODUCT CALL TOLL FREE DAY OR NIGHT 1 800-331-3148

Sold By

FMC

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104

Product of Denmark

Net Contents: 2.5 Gallons

03-27-20

FIRST AID

CONTAINS AN ORGANOPHOSPHATE THAT INHIBITS
CHOLINESTERASE

| | |
|----------------------------|---|
| 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 a poison control center or doctor.• Do not give anything by mouth to an unconscious person. |
| 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 to 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. |

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.

NOTE TO PHYSICIAN: This product is a cholinesterase inhibitor. Treat symptomatically. Atropine is antidotal.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed. Harmful if absorbed through skin. Causes moderate eye irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, applicators, flaggers, and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves made of Barrier Laminated Butyl Rubber ≥ 14 mils, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, Natural Rubber ≥ 14 mils, Polyethylene, Polyvinyl Chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils.
- Shoes plus socks

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

USER SAFETY RECOMMENDATIONS

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE 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.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic organisms, including fish and invertebrates. Use care when applying in or to an area which is adjacent to any body of water, and do not apply when weather conditions favor drift from target area. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product.

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

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply or allow to drift onto blooming crops or weeds while bees are actively foraging in the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local public health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort. When applying as a wide area mosquito adulticide, do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For use by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

FYFANON® EW INSECTICIDE PRODUCT DESCRIPTION

Fyfanon EW Insecticide is a water-based malathion emulsion formulation for outdoor space-spray application to control mosquitoes. It contains proprietary formulation technology designed to reduce the odor of malathion.

Fyfanon EW Insecticide is to be used for ground applications only and is approved for use in populated and rural areas.

Fyfanon EW insecticide may be used undiluted or diluted with water (only) – It must not be diluted with oil-based solvents or diluents.

Fyfanon EW Insecticide is recommended to be part of a rotational program to reduce the occurrence of resistance developing in mosquito control programs – see RESISTANCE MANAGEMENT section below.

RESTRICTIONS

- Do not apply more than 0.23 lb AI/Acre/day.
- Do not re-treat a site more than 3 times in any one week. However, more frequent treatments may be made to prevent or control a threat to public and/or animal health determined by a federal, state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne diseases in animal or human populations, or if specifically approved by the state or tribe during a natural disaster effort.
- Apply when wind speed is equal to or greater than 1 mph.
- Not for aerial application
- Not for use on crop-land
- This product is for outdoor use only

GENERAL PREPARATION

- Fyfanon EW Insecticide is only to be applied as an outdoor space-spray for wide-area adult mosquito control.
- Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.
- For best results, apply when mosquitoes are most active and meteorological conditions are conducive to keeping the spray cloud in the air column close to the ground. An inversion of air temperatures and a light breeze is preferable. Application during the cooler hours of the night or early morning may be recommended depending on target species. Use of technology to improve accuracy of treatments is recommended; this may include GPS mapping, weather monitoring or onboard or land based predictive drift modeling systems.
- Ensure Fyfanon EW Insecticide (diluted or undiluted) is thoroughly agitated before use. Avoid prolonged storage of diluted product in application equipment.

OPERATING EQUIPMENT PREPARATION

Correct Droplet size: Each cold aerosol generator must be adjusted to produce the correct droplet spectrum for optimal mosquito control. Calibrate spray equipment so that the Volume Median Diameter (VMD) of the aerosol is less than 30 microns (Dv 0.5<30µm) and 90% of the volume is in droplets less than 50µm (Dv 0.9<50µm). Directions from the equipment manufacturer, insecticide vendor or a test facility can be used to establish the correct droplet size spectra.

Maintenance: Equipment manufacturer's recommendations for cleaning and maintenance of the aerosol unit must be followed. The unit must be inspected before use to correct any malfunctions and to verify that the flow rate is correct. For truck mounted sprayers, use the table below to determine the application volumes required at each vehicle speed. Vehicle should not travel greater than 20 mph. Shut off spray equipment when vehicle is stopped.

APPLICATION INSTRUCTIONS

Truck Mounted Sprayer Applications – Non-thermal/cold Aerosol Generator.

Base acreage calculations on manufacturer's directions and recommended swath width.

For control of adult mosquitoes, apply Fyfanon EW insecticide at the rate of 0.03 to 0.06 lb ai / A (1.05 to 2.1 fluid ounces Fyfanon EW Insecticide per acre).

| Truck Mounted Application Rates for FYFANON® EW INSECTICIDE (300 foot swath) | | | | | | |
|---|--------------------------------------|--|-------------|-------------|-------------|--|
| lb ai/Acre | Dilution ratio (with water) | Application Rates Fluid Ounces per Minute at Vehicle Speeds | | | | Fl. oz. Finished Spray per Acre |
| | | 5 mph | 10 mph | 15 mph | 20 mph | |
| 0.03 – 0.06* | undiluted | 3.2 – 6.3 | 6.3 – 12.6 | 9.5 – 18.9 | 12.6 – 25.2 | 1.05 – 2.1 |
| | 1:1 | 6.3 – 12.6 | 12.6 – 25.2 | 18.9 – 37.8 | 25.2 – 50.4 | 2.1 – 4.2 |

*Where dense vegetation or a public health emergency is present, the use of the highest label rate is recommended.

Hand-held Portable or Backpack Application

Apply through non-thermal/cold aerosol application equipment. Target application of Fyfanon EW Insecticide is 1.05 – 2.1 fl.oz/Acre (0.03 – 0.06 lb ai/Acre). Application calculations assume a 50 foot swath and a walking speed of 2.9 ft/second – at this speed it will take 300 seconds (5 minutes) to walk 870 ft which (by using a 50 ft spray swath) covers one acre.

1 fl.oz/minute output: Sprayer calibrated to deliver 1 fl.oz finished spray per minute (5 fl.oz finished spray delivered per acre): Dilute Fyfanon EW Insecticide 1 part concentrate + 3.7 parts water to deliver 0.03 lb AI/Acre. Dilute Fyfanon EW Insecticide 1 part concentrate + 1.4 parts water to deliver 0.06 lb AI/Acre.

2 fl.oz/minute output: Sprayer calibrated to deliver 2 fl.oz finished spray per minute (10 fl.oz finished spray delivered per acre): Dilute Fyfanon EW Insecticide 1 part concentrate + 8.8 parts water to deliver 0.03 lb AI/Acre. Dilute Fyfanon EW Insecticide 1 part concentrate + 3.7 parts water to deliver 0.06 lb AI/Acre.

Application table for handheld/backpack sprayer for 2.9 ft/second walking speed & 50ft swath

| Finished spray per acre (fl.oz) | 0.03 lb AI/Acre | | 0.06 lb AI/Acre | |
|--------------------------------------|---|---------------|--|---------------|
| | Fl.oz Fyfanon® EW insecticide for quantity of finished spray required | | Fl.oz of Fyfanon® EW insecticide for quantity of finished spray required | |
| | For 1 Gallon | For 2 Gallons | For 1 Gallon | For 2 Gallons |
| 5 fl.oz (1fl.oz/minute spray rate) | 27 fl.oz | 54 fl.oz | 54 fl.oz | 108 fl.oz |
| 10 fl.oz (2 fl.oz/minute spray rate) | 13 fl.oz | 27 fl.oz | 27 fl.oz | 54 fl.oz |

RESISTANCE MANAGEMENT

Mosquitoes are known to develop resistance to insecticides following repeated exposure to the same chemical class. However, the incidence, speed and degree of resistance development cannot be predicted because of environmental and biological variation. The use of Fyfanon EW Insecticide should conform to resistance management strategies if established for your local use area. Consult local or state mosquito management authorities for information.

Optimal mosquito population control is best achieved by having an understanding of local mosquito resistance status to products being applied for their control. Various factors may result in less than acceptable mosquito control including non-optimal application techniques, equipment problems and adverse weather conditions. Once these are determined not to be the cause, mosquito tolerance or resistance may be suspected. Consult your local company representative, pest management advisor or other experts such as CDC to help establish the cause of control problems and to develop a local strategy.

STORAGE AND DISPOSAL

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

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

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

CONTAINER HANDLING:

Nonrefillable containers (equal to or less than 5 gallons):

Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

Nonrefillable containers (greater than 5 gallons):

Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

CONDITIONS FOR SALE AND LIMITATIONS OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before using this product. If the terms are not acceptable, return the product at once, unopened.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC. All such risks shall be assumed by User, and User agrees to hold FMC harmless for any claims relating to such factors.

FMC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) FMC, and user assumes the risk of any such use.

To the extent permitted by law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE USER, AND THE EXCLUSIVE LIABILITY OF FMC FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

This Conditions of Sale and Limitation of Warranty and Liability may not be amended by any oral or written agreement.

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1. The first part of the document is a letter from the President of the United States to the Congress, dated January 3, 1862. It is a very important document, as it contains the President's annual message to Congress. The letter is written in a formal, dignified style, and it is one of the most important documents in the history of the United States.

2. The second part of the document is a report from the Secretary of the Treasury, dated January 3, 1862. It is a very important document, as it contains the Secretary's annual report to Congress. The report is written in a formal, dignified style, and it is one of the most important documents in the history of the United States. The report discusses the state of the Treasury, the amount of the public debt, and the amount of the public revenue. It also discusses the state of the country, and the progress of the war.

3. The third part of the document is a report from the Secretary of the Interior, dated January 3, 1862. It is a very important document, as it contains the Secretary's annual report to Congress. The report is written in a formal, dignified style, and it is one of the most important documents in the history of the United States. The report discusses the state of the Interior, the amount of the public land, and the amount of the public revenue. It also discusses the state of the country, and the progress of the war.



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Fyfanon EW Insecticide

Other means of identification

Product Code(s) FO002270-A

Legacy Product Code F4279-1; 3110-03

Synonyms MALATHION; diethyl [(dimethoxyphosphinothioyl)thio]butanedioate (CAS Name);
diethyl(diméthoxyphosphinothioylthio)succinate (IUPAC Name)

Active Ingredient(s) Malathion

Formula $C_{10}H_{19}O_6PS_2$ (Malathion)

Chemical Family Organophosphate

Recommended use of the chemical and restrictions on use

Recommended Use: Insecticide

Restrictions on Use: Use as recommended by the label

Supplier Address

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
(215) 299-6000 (General Information)
msdsinfo@fmc.com (E-Mail General Information)

Emergency telephone number

For leak, fire, spill or accident emergencies, call:
1 800/742-9300 (CHEMTREC - U.S.A.)
1 703/752-7387 (CHEMTREC - Collect - All Other Countries)

Medical Emergencies:
1 800/733-3148 (ProPharma Group - U.S.A. & Canada)
1 651/632-6793 (ProPharma Group - All Other Countries - Collect)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation

Category 2

| | |
|-----------------------------------|-------------|
| Serious eye damage/eye irritation | Category 2B |
| Skin sensitization | Category 1 |
| Carcinogenicity | Category 2 |

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning

Hazard Statements

- H302 - Harmful if swallowed
- H315 - Causes skin irritation
- H320 - Causes eye irritation
- H317 - May cause an allergic skin reaction
- H351 - Suspected of causing cancer
- H410 - Very toxic to aquatic life with long lasting effects



Precautionary Statements - Prevention

- P202 - Do not handle until all safety precautions have been read and understood
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

- P308 + P313 - If exposed or concerned: Get medical advice/attention
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P337 + P313 - If eye irritation persists: Get medical advice/attention
- P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
- P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
- P362 - Take off contaminated clothing and wash before reuse
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
- P330 - Rinse mouth

Precautionary Statements - Storage

- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
- P411 + P235 - Store at temperatures not exceeding 25°C/77°F. Keep cool

Precautionary Statements - Disposal

- P501 - Dispose of contents/container according to label directions

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

Very toxic to aquatic life with long lasting effects. May be harmful in contact with skin.

3. COMPOSITION INFORMATION ON INGREDIENTS

Chemical Family

Organophosphate

| Chemical name | CAS-No | Weight % |
|---------------------|-----------|----------|
| Malathion Technical | 121-75-5 | 40.9 |
| Sodium Hydroxide | 1310-73-2 | 1-5 |

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

| | |
|--|--|
| Eye Contact | Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists. |
| Skin Contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists. |
| Inhalation | Move person from contaminated area to fresh air. Seek medical attention immediately. If person is not breathing, give artificial respiration, preferably by mouth-to-mouth, if possible. |
| Ingestion | Do not induce vomiting without medical advice. Rinse mouth with water and afterwards drink plenty of water or milk. If vomiting does occur, rinse mouth and drink fluids again. Never give anything by mouth to an unconscious person. Immediate medical attention is required. |
| Most important symptoms and effects, both acute and delayed | Malathion is a cholinesterase inhibitor affecting the central and peripheral nervous systems producing respiratory depression. |
| Indication of immediate medical attention and special treatment needed, if necessary | This product contains a reversible cholinesterase inhibitor. If any sign of cholinesterase inhibition occurs, call a doctor (physician), clinic or hospital immediately. Explain that the victim has been exposed to an organophosphorus insecticide. Describe his/her condition and the extent of exposure. Immediately remove the exposed person from the area where the product is present. Treatment is symptomatic and supportive. Atropine sulfate is antidotal. |

5. FIRE-FIGHTING MEASURES

| | |
|---|---|
| Suitable Extinguishing Media | Dry chemical, Carbon dioxide (CO ₂), Water spray, Foam. Avoid heavy hose streams. |
| Specific Hazards Arising from the Chemical | None known. |
| Hazardous Combustion Products | The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as Dimethyl sulphide, methyl mercaptan, Sulfur dioxide, Carbon monoxide, Carbon dioxide (CO ₂), phosphorus pentoxide. |
| Explosion data | |
| Sensitivity to Mechanical Impact | No information available. |
| Sensitivity to Static Discharge | Yes. |
| Protective equipment and precautions for firefighters | Use water spray to cool fire exposed surfaces and protect personnel. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Dike to prevent runoff. As in any fire, wear self-contained breathing apparatus and full protective gear. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|---------------------------|--|
| Personal Precautions | Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8. |
| Other | For further clean-up instructions, call EMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above. |
| Environmental Precautions | Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, |

streams, ponds, and sewer drains.

Methods for Containment

Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up

If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with strong industrial detergent and much water. Absorb wash liquid onto a suitable absorbent such as hydrated lime, universal binder, attapulgite, bentonite or other absorbent clays and transfer contaminated absorbent to suitable containers. The used containers should be properly closed and labelled.

7. HANDLING AND STORAGE

Handling

Handle in accordance with good industrial hygiene and safety practice. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Use only in area provided with appropriate exhaust ventilation. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling. Wear personal protective equipment. Refer to Section 8.

Storage

Keep at a temperature not exceeding 25°C. Keep away from heat and sources of ignition i.e., steam pipes, radiant heaters, hot air vents or welding sparks. Keep container tightly closed in a dry and well-ventilated place. Keep out of reach of children and animals. Keep away from food, drink and animal feeding stuffs. Keep store only in original container. Keep in properly labeled containers.

Incompatible products

Strong alkalis, Amines, Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH | Mexico |
|--------------------------------|----------------------------------|-----------------------------------|--|-------------------------------------|
| Malathion Technical (121-75-5) | TWA: 1 mg/m ³ | TWA: 15 mg/m ³ S* | IDLH: 250 mg/m ³ TWA: 10 mg/m ³ | Mexico: TWA 10 mg/m ³ |
| Sodium Hydroxide (1310-73-2) | Ceiling: 2 mg/m ³ | TWA: 2 mg/m ³ | IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³ | Mexico: Ceiling 2 mg/m ³ |
| Chemical name | British Columbia | Quebec | Ontario TWA/CEV | Alberta |
| Malathion Technical (121-75-5) | TWA: 1 mg/m ³ Skin | TWA: 10 mg/m ³ Skin | TWA: 1 mg/m ³ Inhalable fraction and vapor Skin | TWA: 1 mg/m ³ Skin |
| Sodium Hydroxide (1310-73-2) | Ceiling: 2 mg/m ³ | Ceiling: 2 mg/m ³ | CEV: 2 mg/m ³ | Ceiling: 2 mg/m ³ |

Appropriate engineering controls

Engineering measures

Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.) ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures such as personal protective equipment

Eye/Face Protection

For exposure to mists or sprays, wear safety goggles or face shield for chemical agents. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and Body Protection

Minimize skin contamination by following good industrial hygiene practices.

Hand Protection

Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the

outside of gloves with soap and water before reuse. Check regularly for leaks.

Respiratory Protection

The product does not automatically present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material which produces a heavy vapour or mist, workers should put on officially approved respiratory protection equipment with a universal filter type including particle filter.

Hygiene measures

Clean water should be available for washing in case of eye or skin contamination. Remove and wash contaminated clothing before re-use. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Launder work clothing separately from regular household laundry.

General Information

If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|------------------------------|--|
| Appearance | Suspension |
| Physical State | Liquid |
| Color | Off-white |
| Odor | Glue-like |
| Odor threshold | No information available |
| pH | 4.53 @ 25°C (undiluted); 5.32 @ 25°C (1% dilution in water) The pH is expected to decrease on prolonged storage |
| Melting point/freezing point | < 0 °C |
| Boiling Point/Range | No information available |
| Flash point | > 100 °C / 212 °F (PMCC) |
| Evaporation Rate | No information available |
| Flammability (solid, gas) | Not applicable (Product is a liquid) |
| Flammability Limit in Air | |
| Upper flammability limit: | No information available |
| Lower flammability limit: | No information available |
| Vapor pressure | No information available |
| Vapor density | No information available |
| Density | 1.072 g/mL @ 20°C |
| Specific gravity | No information available |
| Water solubility | Miscible with water |
| Solubility in other solvents | No information available |
| Partition coefficient | No information available |
| Autoignition temperature | No information available |
| Decomposition temperature | No information available |
| Viscosity, kinematic | No information available |
| Viscosity, dynamic | 1092 mPa.s at 20°C, 973 mPa.s at 40°C |
| Explosive properties | Not explosive |
| Oxidizing properties | Non-oxidizing |
| Molecular weight | No information available |
| Bulk density | No information available |

10. STABILITY AND REACTIVITY

| | |
|------------------------------------|---|
| Reactivity | None under normal use conditions |
| Chemical Stability | Stable up to 100 °C. Heating above this temperature may cause explosive decomposition. |
| Possibility of Hazardous Reactions | None known |
| Hazardous polymerization | Hazardous polymerization does not occur. |
| Conditions to avoid | Heating can release hazardous gases. The product should never be heated above 55°C. Local heating above this temperature should be avoided as well. |
| Incompatible materials | Strong alkalis, Amines, Strong oxidizing agents. |
| Hazardous Decomposition Products | See Section 5 for more information. |

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral : > 2000 mg/kg (rat)
LD50 Dermal : > 4000 mg/kg (rat)
LC50 Inhalation : > 5.75 mg/L 4 hr (rat)

Serious eye damage/eye irritation Mildly irritating (rabbit).
Skin corrosion/irritation Mildly irritating (rabbit).
Sensitization May cause sensitization by skin contact

Information on toxicological effects

Symptoms Malathion is a cholinesterase inhibitor affecting the central and peripheral nervous systems producing respiratory depression. On contact, the first symptoms to appear may be irritation. Symptoms of cholinesterase inhibition: nausea, headache, vomiting, cramps, weakness, blurred vision, pin-point pupils, tightness in chest, laboured breathing, nervousness, sweating, watering of eyes, drooling or frothing of mouth and nose, muscle spasms and coma.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Mutagenicity The product contains no ingredients known to be mutagenic.
Carcinogenicity Malathion Limited evidence of a carcinogenic effect.
Neurological effects Malathion: No information available.
Reproductive toxicity This product does not contain any known or suspected reproductive hazards.
STOT - single exposure No known effects under normal use conditions.
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. See listed target organs below.
Target organ effects Nervous System, Acetylcholinesterase inhibition.
Neurological effects Malathion: No information available.
Aspiration hazard The product does not present an aspiration/pneumonia hazard.

| Chemical name | ACGIH | IARC | NTP | OSHA |
|---------------------------------|-------|----------|-----|------|
| Malathion Technical 121-75-5 | | Group 2A | | X |

Legend:

IARC (International Agency for Research on Cancer)
Group 2A - Probably Carcinogenic to Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

12. ECOLOGICAL INFORMATION

Ecotoxicity

| Malathion Technical (121-75-5) | | | | |
|--------------------------------|--------------------|-------------------------------------|-------|-------|
| Active Ingredient(s) | Duration | Species | Value | Units |
| Malathion | 96-h LC50 | Oncorhynchus mykiss (rainbow trout) | 0.18 | mg/L |
| | 37-day NOEC | Oncorhynchus mykiss (rainbow trout) | 21 | µg/L |
| | 48-h EC50 | Daphnia magna | 0.72 | µg/L |
| | 21-d NOEC | Daphnia magna | 0.06 | µg/L |
| | 72-h IC50 | Selenastrum capricornutum | 4.06 | mg/L |
| | LD50 | Bobwhite quail | 359 | mg/kg |
| | 5-day dietary LC50 | Bobwhite quail | 3497 | mg/kg |

| | | | | |
|--|-----------------|--------------|------|--------|
| | LD50 | Mallard duck | 1485 | mg/kg |
| | 14-day LC50 | Earthworm | 613 | mg/kg |
| | LD50 acute oral | Honey bees | 0.38 | µg/bee |
| | LD50 topical | Honey bees | 0.27 | µg/bee |

Persistence and degradability Malathion: Biodegradable, but does not meet the criteria for being readily biodegradable, Non-persistent.

Bioaccumulation Malathion: Not expected to bioaccumulate.

Mobility Malathion: Medium mobility; has some potential to reach groundwater.

10. DISPOSAL CONSIDERATIONS

Waste disposal methods Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

Contaminated Packaging Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

11. TRANSPORT INFORMATION

DOT NOT REGULATED Classification below is only applicable when this material is packaged in quantities of 240 lbs or more

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, solid, n.o.s.
Hazard class 9
Packing Group III
Reportable Quantity (RQ) Malathion
Marine Pollutant Malathion.
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Malathion), 9, III, RQ

TDG Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
Marine Pollutant Malathion.
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Malathion), 9, III, RQ

ICAO/IATA

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Malathion), 9, III
Limited quantity 30 kg G

IMDG/IMO

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
EmS No. F-A, S-F
Marine Pollutant Malathion

Description

UN3082, Environmentally hazardous substance, liquid, n.o.s. (Malathion), 9, III

15 REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

| Chemical name | CAS-No. | Weight % | SARA 313 - Threshold Values % |
|--------------------------------|----------|----------|-------------------------------|
| Malathion Technical - 121-75-5 | 121-75-5 | 40.9 | 1.0 |

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|-----|
| Acute health hazard | Yes |
| Chronic health hazard | Yes |
| Fire hazard | Yes |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Malathion Technical 121-75-5 | 100 lb | | | X |
| Sodium Hydroxide 1310-73-2 | | | | X |

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

| Chemical name | Hazardous Substances RQs | Extremely Hazardous Substances RQs |
|---------------------------------|--------------------------|------------------------------------|
| Malathion Technical 121-75-5 | 100 lb 45.4 kg | |
| Sodium Hydroxide 1310-73-2 | 1000 lb 454 kg | |
| Hydrogen peroxide 7722-84-1 | | 1000 lb |

FIFRA Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Harmful if swallowed or absorbed through skin.
Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing.
Toxic to aquatic organisms, including fish and invertebrates.
Highly toxic to bees exposed to direct treatment on blooming crops or weeds.

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

FYFANON® ULV MOSQUITO

INSECTICIDE

ULTRA LOW VOLUME INSECTICIDE CONCENTRATE

FOR USE ONLY BY FEDERAL, STATE, TRIBAL, OR LOCAL GOVERNMENT OFFICIALS RESPONSIBLE FOR PUBLIC HEALTH OR VECTOR CONTROL, OR BY PERSONS CERTIFIED IN THE APPROPRIATE CATEGORY OR OTHERWISE AUTHORIZED BY THE STATE OR TRIBAL LEAD PESTICIDE REGULATORY AGENCY TO PERFORM ADULT MOSQUITO CONTROL APPLICATIONS, OR BY PERSONS UNDER THEIR DIRECT SUPERVISION.

ACTIVE INGREDIENT:

*Malathion.....96.5%

INERT INGREDIENTS.....3.5%

TOTAL.....100.0%

* O,O-dimethyl phosphorodithioate of diethyl mercaptosuccinate
Contains 9.9 lbs. malathion per gallon

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

This is a specimen label intended for use only as a guide in providing general information regarding use of this product. As labels are subject to revisions, always carefully read and follow the label on the product

**IN CASE OF A MEDICAL EMERGENCY INVOLVING THIS PRODUCT,
CALL TOLL FREE, DAY OR NIGHT 1-866-303-6950**

FIRST AID

This product is an organophosphate and is a cholinesterase inhibitor.

IF SWALLOWED:

- 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 a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF INHALED:

- 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:

- Take off contaminated clothing.
- Rinse skin with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

IF IN EYES:

- 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.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-866-303-6950 for emergency medical treatment information.

NOTE TO PHYSICIAN: This product is a cholinesterase inhibitor. Treat symptomatically. Atropine is antidotal.

EPA Reg. No. 67760-34

Cheminova, Inc.
1700 Route 23
Wayne, NJ 07470
Product of Denmark

® Fyfanon is a registered trademark of Cheminova

 **CHEMINOVA**
HELPING YOU GROW

C01J25/7 5/08

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful by swallowing, Inhalation or skin contact. Avoid contact with skin. Avoid breathing spray mist. 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
- Shoes plus socks

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.

ENGINEERING CONTROLS STATEMENTS

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets with 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

User 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.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish, aquatic invertebrates, and aquatic life stages of amphibians. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to aquatic organisms.

Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.

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, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or washwaters.

PHYSICAL OR CHEMICAL HAZARDS

Before using, read the directions contained in this labeling 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.

STORAGE AND DISPOSAL

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

STORAGE: Fyfanon ULV Mosquito 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

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

Nonrefillable containers equal to or less than 5 gallons: Do not reuse or refill this container. Offer for recycling if available. Triple rinse container 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 1/4 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.

Nonrefillable containers greater than 5 gallons: Do not reuse or refill this container. Offer for recycling if available. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank and store rinsate for later use or disposal. Repeat this procedure two more times.

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.

GENERAL

Do not apply more than 0.23 lb active ingredient/A/day.

MOSQUITO CONTROL

MOSQUITO CONTROL IN POPULATED AND RURAL AREAS

Do not re-treat a site more than 3 times in any one week when mosquitoes are swarming or biting. More frequent treatments may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

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

Spray equipment must be adjusted so that the volume or mass median diameter produced is less than 50 microns ($Dv\ 0.5 < 50\ \mu m$) and that 90% of the spray is contained in droplets smaller than 100 microns ($Dv\ 0.9 < 100\ \mu m$). The effects of flight speed and, for non-rotary nozzles, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant or a test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

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

GROUND APPLICATION

Spray equipment must be adjusted so that the volume or mass median diameter is less than 17 microns ($Dv\ 0.5 < 17\ \mu m$) and that 90% of the spray is contained in droplets smaller than 32 microns ($Dv\ 0.9 < 32\ \mu m$). Directions from the equipment manufacturer or vendor, pesticide registrant or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

Thermal Aerosols or Fogs

For control of adult mosquitoes with thermal aerosols or fogs, apply Fyfanon ULV Mosquito at the rate of 6 - 8 oz. actual / gallon (3.9 - 5.2 gallons Fyfanon ULV Mosquito 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 Fyfanon ULV Mosquito.

Nonthermal Aerosols

Adult Mosquito Control - Control of adult mosquitoes over a 300-foot swath can be obtained with nonthermal aerosols of Fyfanon ULV Mosquito using the following rates at the indicated vehicle speeds:

| Vehicle Speed - Miles per Hour | Flow Rate of Fyfanon - Fl. oz./Min. | Maximum Flow - Rate per Hour |
|--------------------------------|-------------------------------------|------------------------------|
| 5 | 1.0 to 2.1 | 1 gallon |
| 10 | 2.0 to 4.3 | 2 gallons |
| 15 | 3.0 to 6.3 | 3 gallons |
| 20 | 4.0 to 8.6 | 4 gallons |

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

Apply Fyfanon ULV Mosquito at the rate of 2 to 4 fluid ounces per acre for control of adult mosquitoes. Application may be made via ground or aerial equipment. No more than 3 applications should be made to a site in any one week when mosquitoes are swarming or biting. More frequent treatments may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the site or tribe during a natural disaster recovery effort.

For enhanced knock-down effects against mosquitoes, Fyfanon ULV Mosquito can be mixed with a synergized pyrethrin emulsifiable concentrate (6% pyrethrin + 60% PBO) in accordance with the most restrictive of label limitations and precautions indicated on both this and the tank-mixed product. Label rates must not be exceeded. This product may not be mixed with any product bearing a label which specifically prohibits such mixing. Prior to tank mixing large quantities mix a small amount in a glass jar to verify that the products are physically compatible.

A tank mix of these may be prepared as follows:

| Component | Rapid knock-down | Improved knock-down |
|-------------------------------|------------------|---------------------|
| Fyfanon ULV Mosquito | 107 fl. oz. | 117 fl. oz. |
| Synergized pyrethrin (6%/60%) | 21 fl. oz. | 11 fl. oz. |

Depending upon your operational needs for knock-down, the amount of synergized pyrethrin can be reduced or adjusted. Application rates of Fyfanon ULV Mosquito and droplet distribution requirements remain the same as for Fyfanon ULV Mosquito used alone.

OPERATING EQUIPMENT

Each nonthermal aerosol generator used for dispersal of Fyfanon ULV Mosquito to control adult mosquitoes must have minimum capability of producing the droplet spectrum described under GROUND APPLICATION. The initial determination of droplet size is made after the unit is installed in a vehicle and prior to its use in mosquito control operations. 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 mph
- Shut off spray equipment when vehicle is stopped

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

WARRANTY DISCLAIMER

ChemInova warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, CHEMINOVA MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

INHERENT RISKS OF USE

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Cheminova or the Seller. All such risks shall be assumed by Buyer and User. Buyer and User agree to hold Cheminova and the Seller harmless for any claims related to such factors.

LIMITATION OF REMEDIES

To the extent consistent with applicable law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to one of the following, at Cheminova's election:

- (1) Refund of purchase price paid by buyer or user for product bought, or
- (2) Replacement of amount of product used.

To the extent consistent with applicable law, Cheminova shall not be liable for consequential, incidental, or special damages or losses in any matter.

The terms of the Warranty Disclaimer above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Cheminova or the Seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

CO/J25/7 5/08

MATERIAL SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

Product identifier: **FYFANON ULV MOSQUITO**

Product use: Active ingredient in insecticides.

Supplier's name and address:

Cheminova Inc.

1700 Route 23, Suite 300

Wayne, NJ, USA

07470

Phone #: (973) 305-6600 (8 AM to 5:00 PM EST, Monday to Friday)

Manufacturer's name and address:

Cheminova A/S.

P.O. Box 9

DK-7620 Lemvig

Denmark

Emergency Telephone #: 1-866-303-6950 (Medical Emergencies)
1-800-424-9300 (24 Hr. Chemtrec Number)

MSDS Prepared by: Cheminova Inc.

MSDS Preparation date: August 19, 2003

Revision date: October 24, 2005

Revision reasons: Refer to Section 16.

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredients | CAS # | % (weight) | ACGIH TLV (mg/m ³) 1 (inhalable) | OSHA PEL (mg/m ³) 15 (total dust) |
|-------------|----------|------------|--|---|
| Malathion | 121-75-5 | 60 - 100 | | |

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

SECTION 3 — HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Colorless to light yellow liquid, slightly aromatic odor.

Warning! Dangerous exothermic decomposition may occur at temperatures greater than 212°F / 100°C.

May be harmful if inhaled or swallowed. May cause eye irritation.

Contains material which can cause nervous system damage. May be dangerous for the environment.

Malathion is toxic to birds, fish, aquatic invertebrates, aquatic life stages of amphibians and highly toxic to bees.

POTENTIAL HEALTH EFFECTS

Target organs: Eyes, skin, respiratory system, digestive system, nervous system.

Signs and symptoms of short-term (acute) exposure:

Inhalation: Fyfanon (Malathion) is a cholinesterase inhibitor of low mammalian toxicity. However storage at too high temperatures may induce formation of the much more toxic and synergistic contaminant isomalathion (LD₅₀, acute oral, rat = 89 mg/kg). Malathion and isomalathion can affect you when breathed in and can cause organophosphorous poisoning. Symptoms of poisoning may include headache, nausea, vomiting, blurred vision, tightness in chest, drooling, frothing of mouth and nose, convulsions, coma and death.

Skin contact: Direct skin contact may cause slight irritation. Malathion and isomalathion can be rapidly absorbed through all skin surfaces. Causes symptoms similar to those listed for inhalation.

Eye contact: Direct eye contact causes irritation. Malathion and isomalathion can be rapidly absorbed through all skin and eye surfaces. Causes symptoms similar to those listed for inhalation.

Ingestion: Malathion and isomalathion are poisons through ingestion. Causes symptoms similar to those listed for inhalation.

Effects of long-term (chronic) exposure: Prolonged or repeated overexposure may cause behavioural changes.

Carcinogenicity: See TOXICOLOGICAL INFORMATION (Section 11).

Other important hazards: Cholinesterase inhibitor. May cause Central Nervous System depression. May cause damage to the peripheral nervous system. See TOXICOLOGICAL INFORMATION (Section 11).

Potential environmental effects: Malathion is toxic to birds, fish, aquatic invertebrates, aquatic life stages of amphibians and highly toxic to bees. See ECOLOGICAL INFORMATION (Section 12).

SECTION 4 — FIRST AID MEASURES

Inhalation: Immediately remove victim to fresh air. If breathing has stopped, begin artificial respiration immediately. Transport to a clinic or hospital immediately.

Skin: Immediately flush skin with running water for at least 15 minutes, while removing contaminated clothing and shoes. Obtain medical attention immediately. Thoroughly clean contaminated clothing before re-use.

Eyes: Immediately flush eyes with running water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention immediately.

Ingestion: If ingested, have victim rinse mouth, then drink 6 to 8 ounces of water. Induce vomiting immediately only under the direct supervision of qualified medical personnel. Never give anything by mouth if victim is unconscious or convulsing. Transport to a clinic or hospital immediately.

Note to physician: Malathion is a cholinesterase inhibitor affecting the central and peripheral nervous systems and producing respiratory and cardiac depression. Decontamination procedures such as whole body washing, gastric lavage and administration of activated charcoal are often required. If symptoms are present, administer atropine sulphate in large doses. Two to four mg intravenously or intramuscularly as soon as possible. Repeat at 5 to 10 minute intervals until signs of atropinization appear and maintain full atropinization until all organophosphorous is metabolised. Obidoxime chloride (Toxogonin), alternatively pralidoxime chloride (2-PAM), is a pharmacological antidote and may be administered as an adjunct to, but not a substitute for atropine, which is a symptomatic and often life-saving antidote. At first sign of pulmonary edema, the patient should be given supplemental oxygen and treated symptomatically. Continued absorption of Malathion may occur and relapse may occur after initial improvement. **VERY CLOSE SUPERVISION OF THE PATIENT IS INDICATED FOR AT LEAST 48 HOURS.**

SECTION 5 — FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability: This product is not considered to be flammable. Material will decompose rapidly when exposed to heat ($>212^{\circ}\text{F} / 100^{\circ}\text{C}$) and flame, increasing the risk of explosion. Heat of decomposition may cause closed containers to build up pressure and explode.

Flammability classification (OSHA 29 CFR 1910.1200): Non-flammable.

Flash point (Method): $325^{\circ}\text{F} (163^{\circ}\text{C})$ (PMCC).

Lower flammable limit (% by volume): Not available.

Upper flammable limit (% by volume): Not available.

Explosion data:

Sensitivity to mechanical impact: Not sensitive.

Sensitivity to static discharge: Not expected to be sensitive to static discharge.

Auto-ignition temperature: $532^{\circ}\text{F} / 278^{\circ}\text{C}$

Suitable extinguishing media: For small fires, use dry chemical or carbon dioxide. For large fires, use water spray or foam.

Special fire-fighting procedures/equipment: Firefighters should wear proper chemically protective equipment and self-contained breathing apparatus operated in positive pressure mode. Move containers from fire area if it can be done without risk. Dike area to prevent water run-off. Water spray may be useful in cooling equipment and containers. Avoid spreading burning material with water jet.

Hazardous combustion products: Dimethyl sulfide, carbon oxides, phosphorous oxides, sulfur oxides.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions: Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. Dike far ahead of the spill for later recovery or disposal. Washings must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

Spill response/Cleanup: It is recommended to have a predetermined plan for the handling of spills. Eliminate all sources of heat, sparks and flame. Ventilate area of release. Stop leak if you can do so without risk. Contain the spill to prevent any further contamination of surface soil or water. Notify the appropriate authorities. For spills on the floor or other impervious surfaces, absorb spill with inert, non-combustible absorbent material, such as universal binder, hydrated

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lime, Fuller's earth or other absorbent clays. Scoop up and place contaminated absorbent material into suitable containers for later disposal (see Section 13). Rinse spill area with soda lye. Do not flush to sewer or allow to enter

SECTION 6 — ACCIDENTAL RELEASE MEASURES CONTINUED

confined spaces. Large spills that soak into the ground should be dug up, placed in suitable containers and disposed of appropriately (see Section 13). Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body. The used containers should be properly closed and labelled. Notify the appropriate authorities.

Prohibited materials: None known.

Special spill response procedures: If a spill/release in excess of EPA reportable quantity is made into the environment, immediately notify the national response center (phone: 1-800-424-8002).

EPA/CERCLA Reportable quantity: Malathion (RQ 100 lbs.)

SECTION 7 — HANDLING AND STORAGE

Safe handling procedures: This material is a toxic liquid. Wear full chemically protective equipment during handling. Use only in well ventilated area. Avoid all contact with eyes, skin and clothing. Do not inhale vapors or mists. Keep away from all unprotected persons and children. Do not use near sources of heat, flame or direct sunlight. Malathion should never be heated above 131°F / 55°C and also local heating above this temperature should be avoided. Keep away from alkalies and incompatibles. Use caution when opening containers. Keep container tightly closed when not in use. Wash thoroughly after handling.

Storage recommendations: Store in a cool, dry, well ventilated area away from incompatibles. Store in closed, labelled containers. Product should be stored at temperatures not exceeding 68 to 77°F (20 to 25°C). Protect container from physical damage. No smoking in the area. Inspect containers periodically for damage or leaks.

Special packaging materials: Always keep in containers made of the same materials as the supply container.

SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and engineering controls: If handled indoors, provide mechanical exhaust ventilation to keep concentrations below specified TLV's and PEL's.

Respiratory protection: Respiratory protection is required. Wear a pesticide respirator jointly approved by the MSHA and NIOSH. Advice should be sought from respiratory protection specialists.

Protective gloves: Wear impervious chemical gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton. Advice should be sought from glove suppliers on the proper selection of gloves.

Eye protection: Wear safety glasses with side shields or chemical splash goggles to prevent splashes from entering the eyes.

Other protective equipment: Wear appropriate protective clothing to prevent skin contact, such as coveralls or long sleeved shirt, long pants, and shoes and socks. Other protective equipment, such as an eyewash station and safety shower, may be required depending on exposure and on workplace standards.

Permissible exposure levels: See Section 2.

General hygiene considerations: Do not breathe vapors or mists. Avoid contact all contact with eyes, skin and clothing. Before removing gloves, wash them with soap and water. Always wash hands, face and arms with soap and water before smoking, eating or drinking. After work, take off all protective equipment, work clothes and shoes, and wash with soap and water. Respirator should be cleaned and filter replaced according to manufacturer's instructions. Wear only clean, uncontaminated clothes when leaving place of work. Persons working with this product for a longer period should have frequent blood tests for cholinesterase levels. If the cholinesterase levels fall below a critical point, no further exposure should be allowed until it has been determined, by means of blood tests, that cholinesterase levels have returned to normal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical state, odor and appearance: Colorless to light yellow or light pink liquid, slightly aromatic odor.

Odor threshold: N/A

Specific gravity (water = 1): 1.23 g/mL @ 68°F / 20°C

Solubility in water: 148.2 mg/L @ 77°F / 25°C.

Solubility in organic solvents: acetone; methanol; ethyl acetate; 1,2-dichloromethane; and xylene: >250 g/l at 20°C
heptane: 57-67 g/l at 20°C

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES CONTINUED

pH: 3.7–3.8 @ 68°F / 20°C (equal amounts of Fyfanon and distilled water).
Melting/freezing point: 37.1°F / 2.85°C.
Boiling point: 313–315°F (156–157°C) @ 0.7 mmHg (however, refer to Section 10, Stability and reactivity information).
Vapour pressure: 3.4×10^{-5} mmHg @ 77°F / 25°C
 1.4×10^{-4} mmHg @ 113°F / 45°C
Viscosity: 16.4 centipoise @ 104°F / 40°C
30.0 centipoise @ 77°F / 25°C
Surface tension: 57.8 mN/m @ 68°F / 20°C (saturated aqueous solution)
Vapour density (Air=1.0): N/A_v
Percent Volatile by Weight: N/A_v
Evaporation rate (n-BuAc=1.0): N/A_p
Coefficient of n-Octanol/water distribution: K_{ow} = 560
Solubility in organic solvents: Soluble in most organic solvents such as aromatic hydrocarbons, esters and alcohols.
Moderately soluble in aliphatic hydrocarbons.

SECTION 10 — REACTIVITY AND STABILITY DATA

Stability and reactivity: Stable if handled below 131°F / 55°C. At higher temperatures decomposition may take place, and the released heat from decomposition can raise the temperature further and accelerate decomposition. Malathion can corrode iron, steel, tin plate and copper. It can be rapidly hydrolysed at pH > 7.
Hazardous polymerization: Above 284°F / 140°C Fyfanon will decompose rapidly, significantly increasing the risk of inducing explosions. Direct local heating such as electric heating or by steam must be avoided. The decomposition is to a considerable extent dependant on time as well as temperature due to self-accelerating exothermic and autocatalytic reactions. The reactions involve rearrangements and polymerisation releasing volatile, malodorous and inflammable compounds such as dimethyl sulfide.
Conditions to avoid: Avoid heat, flame and direct sunlight.
Materials to avoid (incompatibles): Strong alkalis, amines and strong oxidizing compounds. The product can corrode iron, steel, tin plate and copper. Fyfanon is rapidly hydrolysed at pH > 7.0.
Hazardous decomposition products: Storage at too high temperatures may induce formation of the more toxic and synergistic contaminant isomalathion. Refer to 'Hazardous combustion products', Section 5.

SECTION 11 — TOXICOLOGICAL INFORMATION

Routes of exposure: Skin contact, skin absorption, eye contact, inhalation, and ingestion.
Toxicological data:
Fyfanon: LC_{50} (mg/L/4 hrs) = >5.2
 LD_{50} , oral, rat (mg/kg) = ~5500
 LD_{50} , dermal, rat (mg/kg) = >2000
Carcinogenicity: Malathion is not classified as carcinogenic by IARC, ACGIH, OSHA or NTP.
Teratogenicity, mutagenicity, other reproductive effects: None observed in test animals.
Sensitization to material: None known.
Synergistic materials: Not available.
Conditions aggravated by exposure: Repeated exposures to cholinesterase inhibitors, such as Malathion, may without warning cause increased susceptibility to doses of any cholinesterase inhibitor.

SECTION 12 — ECOLOGICAL INFORMATION

Chemical fate information: The active ingredient, Malathion, is readily biodegradable. It undergoes rapid degradation in the environment and, without problems, in sewage treatment plants. No adverse effects are observed at concentrations up to 100 mg/L in waste water treatment plants. Degradation occurs both aerobically and anaerobically, and biologically as well as abiotically. Under normal conditions, Malathion is of medium mobility in soil, but is degraded rapidly. The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment.
Ecotoxicological information: The bioconcentration factor (BCF) of Malathion is 95 (average for several fish species). Malathion is toxic to birds, fish, aquatic invertebrates, aquatic life stages of amphibians and highly toxic to bees. The acute toxicity to wildlife species is:
Fish – 96-Hr LC_{50} , Rainbow trout (*Salmo gairdneri*) = 0.18 mg/L; 37-day NOEC: 21 µg/L

SECTION 12 — ECOLOGICAL INFORMATION CONTINUED

Invertebrates — 48-Hr EC_{50} , Daphnids (*Daphnia magna*) = 0.72 $\mu\text{g/L}$; 21-day NOEC: 0.06 $\mu\text{g/L}$
Algae — Green algae (*Selenastrum capricornutum*) 72-Hr LC_{50} = 4.06 mg/L
Birds — LD_{50} , Bobwhite quail (*Colinus virginianus*) = 359 mg/kg; 5-day dietary LC_{50} : 3497 mg/kg
 LD_{50} , Mallard duck (*Anas platyrhynchos*) = 1485 mg/kg
Earthworms — 14-day LC_{50} , (*Eisenia foetida foetida*) = 613 mg/kg soil
Bees — LD_{50} , worker honey-bees, acute oral = 0.38 $\mu\text{g/bee}$.
 LD_{50} , worker honey-bees, topical = 0.27 $\mu\text{g/bee}$

SECTION 13 — DISPOSAL CONSIDERATIONS

Handling for disposal: Handle waste according to recommendations in Section 7.
Methods of disposal: Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Triple rinse (or equivalent) containers, then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill. Disposal must be in accordance with all applicable federal, state and local regulations. Contact your local, state or federal environmental agency for specific rules.

SECTION 14 — TRANSPORTATION INFORMATION

US 49 CFR information:

Proper Shipping Name: Environmentally hazardous substance, liquid, N.O.S. (Malathion).
Primary Hazard Class: 9.
Label Codes: None.
Identification Number: UN3082
Packing Group: III.
Reportable Quantity: 100 lbs.
Marine Pollutant: Yes (P).

Canadian Transportation of Dangerous Goods Clear Language (CLR) information: Not regulated for transport, unless intended for Marine transport. If this product is intended for marine transport, refer to the following information:
Shipping description: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Malathion), Class 9, UN3082, PGIII.

SECTION 15 — REGULATORY INFORMATION

Canada:

WHMIS information: This product is a Pest Control Product and is not regulated as a Controlled Product under the Hazardous Products Act (HPA). However, for reference purposes only, this product would have the following WHMIS Classification if it were regulated as a Controlled Product under the HPA: Class D2B (Materials causing other toxic effects, Toxic Material); Class F (Dangerously Reactive Material).
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

United States:

California Proposition 65 information: This product does not contain any chemicals known to the state of California to cause cancer or reproductive harm.

EPA/CERCLA Reportable Quantity (RQ): 100 lbs. (Malathion).

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material may be subject to the TSCA notification requirements, since it may contain Malathion (CAS# 121-75-5) a Toxic Chemical constituent.

SECTION 16 — OTHER INFORMATION

HMIS Rating: *1 Health; 1 Flammability; 1 Reactivity

Legend: ACGIH — American Conference of Governmental Industrial Hygienists

CAS — Chemical Abstract Service

CERCLA — Comprehensive Environmental Response, Compensation, and Liability Act of 1980

CFR — Code of Federal Regulations

EPA — Environmental Protection Agency



DUET®

Dual-Action Adulticide

For use only by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

A Quick Knockdown, Oil Soluble Synergized Synthetic Pyrethroid for Effective Control of Adult Mosquitoes, Gnats, Biting and Non-Biting Midges, and Blackflies in Outdoor Residential and Recreational Areas.

ACTIVE INGREDIENTS:

| | |
|---|---------|
| Prallethrin: (RS)-2-methyl-4-oxo-3-(2-propenyl) cyclopent-2-enyl-(1RS)-cis, trans-chrysanthemate | 1.00% |
| Sumithrin®: 3-Phenoxybenzyl-(1RS, 3RS, 1RS, 3SR)-2,2-dimethyl-3-(2-methylprop-1-enyl) cyclopropanecarboxylate | 5.00% |
| * Piperonyl Butoxide | 6.00% |
| ** OTHER INGREDIENTS | 88.00% |
| | 100.00% |

Contains 0.0717 pounds of Prallethrin/Gallon, 0.359 pounds of Sumithrin®/Gallon and 0.359 pounds of Piperonyl Butoxide (PBO)/Gallon

* (butylcarblyl)(6-propylpiperonyl) ether and related compounds

** Contains petroleum distillate

KEEP OUT OF REACH OF CHILDREN

CAUTION

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

FIRST AID

IF SWALLOWED:

- Immediately call a poison control center or doctor.
- Do not induce vomiting unless told to do so by a poison control center or a doctor.
- Do not give any liquid to the person.
- Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Contains petroleum distillates - vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents, call 1-888-746-8742.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

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

PERSONAL PROTECTIVE EQUIPMENT (PPE): Mixers, loaders, applicators, and other handlers must wear the following: long-sleeved shirt, long pants, shoes and socks. See engineering controls for additional requirements.

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

USER SAFETY RECOMMENDATIONS: Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

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

ENVIRONMENTAL HAZARDS

This pesticide is highly toxic to aquatic organisms, including fish and aquatic invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates. Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist. Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or washwaters.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not

apply to or allow drift onto blooming crops or weeds when bees are foraging in the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

USE RESTRICTIONS

For use only by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

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

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

Do not treat a site with more than 0.0038 lb. of each a.i., Sumithrin and piperonyl butoxide and 0.00072 lbs. prallethrin per acre in a single application or in any 24-hour period. Do not apply more than 0.0108 lb. each of Sumithrin and piperonyl butoxide and 0.0022 lb. prallethrin to the same treatment area in a 7 day period. Do not apply more than 0.0216 lb. each of Sumithrin and piperonyl butoxide and 0.0043 lb. prallethrin to the same treatment area in 1 month. Do not exceed 0.1 lb. of Sumithrin or piperonyl butoxide or 0.02 lb. prallethrin per acre in any site in one year. More frequent applications may be made to prevent or control a threat to public and/or animal health determined by a state, tribal, or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

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

Not for use in outdoor residential misting systems. Not for use in metered release systems.

DUET cannot be diluted in water. Dilute this product with light mineral oil if dilution is preferred.

USE INFORMATION

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

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

SPRAY DROPLET SIZE DETERMINATION

Ground-based, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter (VMD) is less than 30 microns (Dv 0.5 < 30 µm) and that 90% of the spray is contained in droplets smaller than 50 microns (Dv 0.9 < 50 µm). Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

Aerial Equipment, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns (Dv 0.5 < 60 µm) and that 90% of the spray is contained in droplets smaller than 115 microns (Dv 0.9 < 115 µm). The effects of flight speed and, for non-rotary atomizers, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

GROUND ULV APPLICATION

To control Mosquitoes and other listed insects, apply DUET at a flow rate of 2.6 to 7.8 fluid ounces per minute at an average vehicle speed of 10 mph using a swath width of 300 feet for acreage calculations (see chart below). For best results, apply when mosquitoes are most active and meteorological conditions are conducive to keeping the spray cloud close to the ground. Certain mosquito species such as *Aedes aegypti* and *Aedes albopictus*, are most active during the day. Application in calm air conditions is to be avoided. Apply only when ground wind speed is greater than or equal to 1 mph. All types of applications should be conducted at temperatures above 60 °F. Under normal residential conditions a flow rate of 4.8 fluid ounces per minute at an average vehicle speed of 10 mph is recommended. If a different vehicle speed is used, adjust rate accordingly. These rates are equivalent to 0.00024 to 0.00072 pounds of Prallethrin and 0.0012 to 0.0038 pounds of Sumithrin® and Piperonyl Butoxide per acre. Vary flow rate according to vegetation density and mosquito population. Use higher flow rate

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in heavy vegetation or when populations are high. DUET may also be diluted with a suitable solvent such as mineral oil and applied by GROUND ULV equipment so long as 1.28 fluid ounces per acre of DUET is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of DUET. Use the following tables to calculate application rates:

| Pounds a.i./Acre | | | DUET Fl.oz./Acre | Flow Rates in fluid oz./minute at truck speeds of: | | | |
|------------------|------------|--------|---------------------|--|--------|--------|--------|
| Prallethrin | Sumithrin® | PBO | | 5 MPH | 10 MPH | 15 MPH | 20 MPH |
| 0.00072 | 0.0036 | 0.0036 | 1.28 | 3.9 | 7.8 | 11.7 | 15.6 |
| 0.00044 | 0.0022 | 0.0022 | 0.79 | 2.4 | 4.8 | 7.1 | 9.5 |
| 0.00036 | 0.0018 | 0.0018 | 0.64 | 1.9 | 3.9 | 5.8 | 7.8 |
| 0.00024 | 0.0012 | 0.0012 | 0.43 | 1.3 | 2.6 | 3.9 | 5.2 |

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

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

AERIAL APPLICATION

DUET may be applied at rates of 0.43 to 1.28 fluid ounces of DUET per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment. Appropriate spray systems include rotary atomizers, flat fan, high pressure, and high pressure impaction nozzles characterized and oriented to achieve the droplet characteristics specified in this label. DUET may also be diluted with a suitable solvent such as mineral oil and applied by aerial ULV equipment so long as 1.28 fluid ounces per acre of DUET is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of DUET. Do not apply by fixed wing aircraft at a height less than 100 feet above the ground or canopy, or by helicopter at a height less than 75 feet above the ground or canopy unless specifically approved by the state or tribe based on public health needs. When making aerial application at an altitude of less than 100 feet, apply only when wind speed at altitude is greater than or equal to 5 mph. When making application at an altitude of 100 feet or greater, apply only when wind speed at altitude is greater than or equal to 3 mph.

STORAGE AND DISPOSAL

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

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

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

CONTAINER DISPOSAL:

[For 2.5-gallon Jugs]: Non-refillable 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 1/4 full with mineral oil and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

[For refillable drums & totes]: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. To clean, the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

FOR MORE INFORMATION CALL 1-800-323-5727

NOTICE: To the extent provided by law, Seller makes no warranty, expressed or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use and/or handling of this material when use and/or handling is contrary to label instructions.
Sumithrin® - Registered Trademark of Sumitomo Chemical Company, Ltd.
Dual® - Registered Trademark of Clarke Mosquito Control Products, Inc.

MANUFACTURED FOR:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
160 N. GARDEN AVENUE
ROSELLE, ILLINOIS 60172

For a 4% Sumithrin product, dilute 1 gallon DUET with 0.26 gallon oil. Finished spray contains 0.29 lbs Sumithrin & PBO and 0.06 pounds Prallethrin per gallon.

| Dosage Description | Pounds a.i./Acre | | | Fluid oz. Finished spray/Acre | Flow Rates in fluid oz./minute at truck speeds of: | | | |
|--------------------|------------------|-----------|--------|-------------------------------|--|--------|--------|--------|
| | Prallethrin | Sumithrin | PBO | | 5 MPH | 10 MPH | 15 MPH | 20 MPH |
| High Population | 0.00072 | 0.0036 | 0.0036 | 1.61 | 4.9 | 9.7 | 14.6 | 19.5 |
| Recommended | 0.00044 | 0.0022 | 0.0022 | 0.88 | 3.0 | 5.9 | 8.9 | 11.9 |
| Light Population | 0.00036 | 0.0018 | 0.0018 | 0.60 | 2.4 | 4.9 | 7.3 | 9.7 |
| | 0.00024 | 0.0012 | 0.0012 | 0.64 | 1.8 | 3.2 | 4.9 | 6.5 |

For a 2.5% Sumithrin product, dilute 1 gallon DUET with 1 gallon oil. Finished spray contains 0.179 lbs Sumithrin & PBO and 0.036 pounds Prallethrin per gallon.

| Dosage Description | Pounds a.i./Acre | | | Fluid oz. Finished spray/Acre | Flow Rates in fluid oz./minute at truck speeds of: | | | |
|--------------------|------------------|-----------|--------|-------------------------------|--|--------|--------|--------|
| | Prallethrin | Sumithrin | PBO | | 5 MPH | 10 MPH | 15 MPH | 20 MPH |
| High Population | 0.00072 | 0.0036 | 0.0036 | 2.57 | 7.8 | 15.6 | 23.4 | 31.1 |
| Recommended | 0.00044 | 0.0022 | 0.0022 | 1.57 | 4.0 | 9.5 | 14.3 | 19.0 |
| Light Population | 0.00036 | 0.0018 | 0.0018 | 1.28 | 3.9 | 7.8 | 11.7 | 15.6 |
| | 0.00024 | 0.0012 | 0.0012 | 0.86 | 2.6 | 5.2 | 7.8 | 10.4 |

For a 2% Sumithrin product, dilute 1 gallon DUET with 1.6 gallons oil. Finished spray contains 0.143 lbs Sumithrin & PBO and 0.029 pounds Prallethrin per gallon.

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

AVAILABLE PACKAGING: 2.5 GAL, 30 GAL, 55 GAL, 275 GAL TOTE
LOT NO.: Marked on Container Label

EPA REG. NO.: 1021-1795-8329
EPA EST. NO.: _____

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26002-80-2
51-03-6

d-phenothrin 5.0
piperonyl butoxide 5.0

CERCLA RQ: None

U.S. California Proposition 65: Not listed

STATE RIGHT-TO-KNOW: National, state, provincial or local emergency planning, community right-to-know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16. Other Information

DISCLAIMER OF LIABILITY: The information in this SDS was obtained from sources we believe to be reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared as is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

NFPA Health Hazards 2
Flammability 1

Instability 0

Physical and Chemical Properties

HMIS Health Hazards 1
Flammability 1
Physical Hazards 0

Personal Protection: X

™ DUET is a Trademark of Clarke Mosquito Control Products, Inc.

® Sumithrin is a Registered Trademark of Sumitomo Company Ltd.

® ETOC is a Registered Trademark of Sumitomo Company Ltd.

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UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

ICAO/IATA (Air transport)

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

SECTION 15. Regulatory Information

FIFRA Information: This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information for safety data sheet and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

Signal word: CAUTION

KEEP OUT OF REACH OF CHILDREN

PRECAUTIONARY STATEMENTS: HAZARDS TO HUMANS AND DOMESTIC ANIMALS: CAUTION. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

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

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

User Safety Recommendations: Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside; then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

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

FIRST AID

If swallowed: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or a doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Note to physician: Contains petroleum distillates. Vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents call 1-888-740-8712.

Other Federal Regulations

SARA TITLE III CLASSIFICATION

Section 302: None

Section 311/312: Immediate (acute) health hazard

Section 313: This product contains the following chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CAS Number

Chemical Name

% by wt.



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Toxicity to Fish: d-Phenothrin 96-hr Acute LC₅₀ 16.7 µg/L (rainbow trout), 15.8 µg/L (bluegill sunfish)
PBO: 96-hour Acute LC₅₀ 6/12 ppm (rainbow trout)
Prallethrin LC₅₀ 0.012 mg/L (rainbow trout)

Toxicity to Aquatic Invertebrates: d-Phenothrin 48-hr LC₅₀ 4.4 µg/L *Daphnia magna*
d-Phenothrin 48-hr LC₅₀ 0.025 µg/L *Mysidopsis bahia*
PBO: 96-hr LC₅₀ 0.49 ppm, *Americamysis bahia*
Prallethrin 48-hr EC₅₀ 0.0062 mg/L *Daphnia*

Toxicity to Plants: No data available

Persistence and Degradability

Product specific data not available. Data referenced is in relation to the active ingredients, d-Phenothrin and PBO

Biodegradability: Not readily biodegradable (by OECD criteria)

Bioconcentration Factor: d-Phenothrin: 592 (edible), 4,000 (non-edible)
PBO: 2, 175

Prallethrin: no data available

Log Kow: d-Phenothrin: 6
PBO: 4.95

Prallethrin: 4.49

Depuration: d-Phenothrin, PBO: 2-4 days

Mobility in Soil: d-Phenothrin has low water solubility and binds tightly to soil. Based on these properties, d-phenothrin is relatively immobile in soil and its potential to contaminate groundwater is low.
PBO is not very soluble in water and adheres moderately to soil with organic matter.
Prallethrin is not very water soluble and adheres moderately with organic material. The hazard for prallethrin to move off the site of application with rain or irrigation is rated moderate.

SECTION 13. Disposal Considerations

Waste Treatment and Disposal methods

Pesticide wastes are regulated. Consult product label for chemical substance and container disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA regional office for guidance.

Container disposal: Rinse thoroughly in accordance with label instructions.

SECTION 14. Transport Information

DOT (US)

Proper Shipping Name: Agricultural Insecticide, N.O.I. Non-Hazardous

Primary Hazard Class/Division: Non-Hazardous

In Non-Bulk quantities (i.e., less than or equal to 119 Gallons / 450 Liters): This material is not regulated by the DOT as a hazardous material.

In Bulk Quantities (more than 119 Gallons / 450 Liters):

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

IMDG (Vessel)



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Stable under recommended normal storage conditions

Possibility of Hazardous Reactions

Hazardous Reactions: None under normal conditions
Hazardous Polymerization: Hazardous polymerization does not occur

Conditions to avoid: Extremes of temperature and direct sunlight

Incompatible materials: Not compatible with strong acids and bases. Not compatible with oxidizing agents.

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)

SECTION 11. Toxicological Information

Information on Likely Routes of Exposure

Routes of entry: Oral, Dermal, Inhalation

May be fatal if swallowed and enters airways due to petroleum distillate. Vomiting may cause aspiration pneumonia.

Information on Toxicological Effects

Acute Toxicity / Effects

Assessment of acute toxicity: Slightly toxic after ingestion. Relatively non-toxic after short-term inhalation. Moderately toxic after short term skin contact. Some or all of the toxicity data reported is bridged from a substantially similar formula.

Oral, (Rat) LD₅₀ >5,000 mg/kg

Dermal, (Rabbit) LD₅₀ >2,000 mg/kg

Inhalation, Rat LC₅₀ >2.04 mg/l (4 hours)

Skin Corrosion/Irritation: Slight irritation at 72 hours. Irritation Index = 0.92

Serious Eye Damage/Irritation: Irritation clearing in 24 hours

Skin Sensitization: Negative. Not considered to be a dermal sensitizer (Buehler).

Conditions aggravated by exposure: None known

Chronic Toxicity / Effects

Assessment of repeated dose toxicity: No significant signs or symptoms indicative of any adverse health effects are expected to occur.

Germ Cell Mutagenicity: This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity: Not carcinogenic. This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Marginally higher incidences of benign liver tumors in mice were observed following lifetime high dose exposures to PBO. The significance of these observations is undetermined and under review. The doses at which tumors were observed for PBO greatly exceeded potential exposure from labeled uses.

Reproductive Effects: This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% produce a fertility impairing effect. No indication of a developmental toxic / teratogenic effect.

STOT – Single exposure Not classified

STOT – Repeated exposure Not classified

SECTION 12. Ecological Information

Ecotoxicity:

Product specific data is not available. Data referenced is in relation to active ingredients, d-Phenothrin and PBO



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| | | | | |
|-------------|-----------|--------------|------------------------------------|---------------------|
| Mineral Oil | 8042-47-5 | OSHA & ACGIH | PEL / TLV, TWA (oil mist, mineral) | 5 mg/m ³ |
|-------------|-----------|--------------|------------------------------------|---------------------|

Exposure controls

Engineering Controls: Use with adequate ventilation. Local exhaust ventilation may be necessary for some operations..

Individual Protection Measures, such as Personal Protection Equipment:

Eye Protection: Safety Glasses, Goggles or Face Shield. Take prudent precautions to avoid contact with eyes.

Skin Protection: Wear a long-sleeved shirt and long pants; shoes and socks.

Hand Protection: It is good industrial hygiene practice to minimize skin contact. If required or preferred, use suitable protective chemical resistant gloves such as latex, nitrile, or neoprene.

Respiratory Protection: None required. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

SECTION 9: Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Appearance: Clear, yellow-colored liquid

Color: 1.0 on Gardner Scale

Odor: Solvent odor

Odor Threshold: No information available

pH: Not applicable. Product is not miscible in water

Melting Point: No information available

Freezing Point: No information available

Initial Boiling Point: No information available

Flash Point: >93.3°C (>200°F) (Tag; Closed Cup)

Evaporation Rate: No information available

Flammability: No information available

Explosion limits [U/L]: No information available

Vapor Pressure: No information available

Vapor Density (Air =1): Heavier than air

Relative Density: No information available

Specific Gravity (Water = 1): 0.860 @ 20°C (68°F)

Solubility: Immiscible

Partition Coefficient: No information available

Auto-Ignition Temperature: No information available

Viscosity: 18 cPs @ 22.0°C (71.6°F) Brookfield

Decomposition Temperature: No information available

Explosive Properties: No information available

Oxidizing Properties: No information available

VOC Content (%): <1.000%

SECTION 10: Stability and Reactivity

Reactivity

No data available

Chemical Stability



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appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SECTION 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Use appropriate protection (see section 8). Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required.

Environmental Precautions: Prevent product from entering into drains and waterways. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities.

Methods and Material for Containment and Cleaning Up

Methods for containment: Prevent further leakage of spillage if safe to do so. Move containers from spill area.

Small spill: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Large Spill: Prevent entry into sewers, water courses, basements or confined areas. Dam up and soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7. Handling and Storage

Precautions for Safe Handling

Protective measures: Wear a long-sleeved shirt, long pants, shoes and socks. Take prudent precautions to avoid contact with skin, eyes, and clothing. Mechanical ventilation should be used when handling this product in enclosed spaces. Do not contaminate water, food or feedstuffs, by storage, handling or by disposal.

Hygiene Measures: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a cool, dry place. Keep container closed. Always store pesticides in the original container. Store away from food and pet food. Keep out of reach of children.

Electrostatic Accumulation Hazard: This product contains petroleum distillates for which there is potential for the accumulation of static electricity. Consideration should be given to bonding and grounding of equipment during loading, unloading, and transfer of this product.

SECTION 8. Exposure Controls / Personal Protection

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

Control Parameters

| Component Name | CAS No. | List | Type | Value* |
|---------------------------|------------|--------------|-------------------------------------|---------------------|
| ETOC® (Prallethrin) | 23031-36-9 | OSHA ACGIH | | None |
| SUMITHRIN® (d-Phenothrin) | 026002-80 | OSHA ACGIH | | None |
| Piperonyl Butoxide | 51-03-6 | OSHA ACGIH | | None |
| Petroleum Distillates | 64742-47-8 | OSHA & ACGIH | TLV/TWA (as oil-mist, if generated) | 5 mg/m ³ |



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Comments: This material is considered hazardous by the 2012 OSHA Hazard Communication Standard [29 CFR 1910.1200(a)(1), and the GHS

SECTION 3. Composition/Information on Ingredients

Components

| Substance Name | CAS No. | Concentration %;w/w |
|---|------------|---------------------|
| ETOC® (Prallethrin) | 23031-36-9 | 1.0 |
| SUMITHRIN® (d-Phenothrin) | 26002-80-2 | 5.0 |
| Piperonyl Butoxide | 51-03-6 | 5.0 |
| Petroleum Distillates, hydrotreated light | 64742-47-8 | 10-20 * |
| White Mineral Oil | 8042-47-5 | 50-75 * |

* The exact percentage (concentration) of composition has been withheld as trade secret.

Ingredients not identified are non-hazardous and/or are not required to be disclosed pursuant to 29 CFR 1910.1200 (2012), and are withheld as trade secret.

SECTION 4. First Aid Measures

Description of First Aid Measures

Eye contact: 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. Call a poison control center/doctor for treatment advice.

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Ingestion: If swallowed, IMMEDIATELY call a poison control center or doctor for treatment advice. DO NOT give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Never give anything by mouth to an unconscious person.

Inhalation: Remove affected person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Indication of Immediate Medical Attention and Special Treatment

Notes to Physician: Contains Pyrethroids and Petroleum Distillates – vomiting may pose an aspiration hazard. For skin effects, a highly efficient therapeutic agent for Pyrethrin/Pyrethroid exposure is topical application of Tocopherol Acetate (Vitamin E).

SECTION 5. Fire-Fighting Measures.

Extinguishing Media

Suitable Extinguishing Media: Water Fog, Carbon Dioxide (CO₂), Dry Chemical, foam

Unsuitable Extinguishing Media: Do not use water jet.

Special Hazards Arising From the Substance or Mixture

Specific Hazards: No information available.

Explosion data:

Sensitivity to Mechanical Impact: None

Sensitivity to static discharge: Yes, use proper bonding and/or grounding procedures.

Special Protective Equipment and Precautions for Fire-Fighters

Protection against fire: As in any fire, wear self-contained breathing apparatus, pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Special Procedures: Treat as oil fire. Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents



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SECTION 1. Identification of the Substance/Mixture and of the Company

Product Identifier

Formulation Identifier: DUET® Dual-Action Adulticide

EPA Registration Number: 1021-1795-8329

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant identified uses: An insecticide for mosquito and vector control
Uses advised against: See product label for use restrictions

Details of the Supplier

Clarke Mosquito Control Products, Inc.

675 Sidwell Court

St. Charles, IL 60174 U.S.A.

+1 (630) 894-2000

Email: Clarke@clarke.com

Emergency Telephone Number

24 Hour MEDICAL Emergency: SafetyCall®: (888) 740-8712 or (952) 852-9509

24 Hour TRANSPORTATION Emergency: CHEMTREC®: (800)-424-9300

International: (703) 527-3887

SECTION 2. Hazards identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the Substance or Mixture

Acute Toxicity (Inhalation): Category 4

Aspiration Toxicity: Category 1

Pictogram:



Signal Word: DANGER

Hazard Statements: Harmful if inhaled.

May be fatal if swallowed and enters airways.

Precautionary Statements:

PREVENTION: Avoid breathing mist/vapors/spray. Use only outdoors or in well-ventilated area.

RESPONSE: IF INHALED- Remove victim to fresh air and keep at rest in a position for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Immediately call a poison center/doctor. Do NOT induce vomiting.

STORAGE: Store locked up in a well-ventilated place. Keep container tightly closed.

DISPOSAL: Dispose of contents/container to an approved waste disposal plant.

Other Hazards Not Classifiable Under OSHA 2012 HCS - Not applicable

ZenivexTM

E20

For use only by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision

- FOR THE CONTROL OF ADULT MOSQUITOES, NON-BITING MIDGES, AND BLACK FLIES
- FOR USE AS A SPACE SPRAY BY AIR AND GROUND APPLICATION TO CONTROL ADULT MOSQUITOES
- CAN BE USED UNDILUTED OR DILUTED
- CONTROLS ADULT MOSQUITOES THAT MAY CARRY WEST NILE VIRUS, EASTERN EQUINE ENCEPHALITIS, ST. LOUIS ENCEPHALITIS
- CONTROLS NON-BITING MIDGES, NUISANCE AND BITING FLIES
- QUICK PERMANENT KNOCKDOWN OF ADULT MOSQUITOES

SPECIMEN LABEL

ACTIVE INGREDIENT:

Etofenprox (CAS #80844-07-1)..... 20%

OTHER INGREDIENTS*: 80%

Total: 100%

Contains 1.48 lbs Etofenprox per gallon

*Contains petroleum distillates

EPA Reg No. 2724-791

KEEP OUT OF REACH OF CHILDREN

CAUTION

See additional Precautionary Statements,
First Aid Treatments, and Directions for Use

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND
DOMESTIC ANIMALS
CAUTION

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and launder before reuse. Repeated exposure to etofenprox can cause skin irritation.

FIRST AID

Call a poison control center or doctor immediately for treatment advice.

If swallowed • Immediately call a poison control center or doctor. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.

If in eyes • 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 eyes. • Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-248-7763 for emergency medical treatment information.

NOTE TO PHYSICIAN: May pose an aspiration pneumonia hazard. Contains petroleum distillate.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic organisms, including fish and aquatic invertebrates. Runoff from treated areas or deposition into bodies of water may be hazardous to fish and other aquatic organisms. Do

not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from water in order to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or washwaters.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Time applications to provide the maximum possible interval between treatment and the next period of bee activity. Do not apply to blooming crops or weeds when bees are visiting the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal, or local health or vector control agency on the basis of documented evidence of disease-causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

PHYSICAL/CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **READ AND FOLLOW ALL LABEL DIRECTIONS.** Before making the first application of the season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.

GENERAL

Zenivex™ is an effective insecticide used at low volumes to control adult mosquitoes, non-biting midges, biting and non-biting flies. Use Zenivex™, either undiluted as Ultra-Low Volume (ULV) or diluted with mineral oil or other suitable oil diluent, for the control of pest species in or near residential, industrial, commercial, urban, recreational areas, woodlands, golf courses, and other areas where these pests are a problem. Do not spray on or allow drift onto pastureland, cropland, or potable water supplies. In the treatment of corrals, feedlots, swine lots, and zoos, cover any exposed drinking water, drinking water fountains, and animal feed before application. Apply Zenivex™ aerially (both fixed and rotary aircraft) for low volume applications or through mist-blowers, backpack, and handheld sprayers for ground applications. Zenivex™ will control flies and mosquitoes and can be used as part of a total integrated pest management program for controlling disease vectors. Apply Zenivex™ at rates from 0.00175 to 0.00700 pounds of etofenprox per acre.

Dilute this product with oil (10-50 cps) only; do not mix with water. Apply when wind is ≥ 1 mph. Do not apply when wind speeds exceed 10 mph. A temperature inversion is preferable to keep the fog close to the ground and applications should be made when labeled insects are most active.

Do not retreat a site more than once in three days; make no more than two applications to a site in any one week or 25 applications in one year. More frequent treatments may be made to prevent or control a threat to public and/or animal health determined by a state, tribal, or local health or vector control agency on the basis of documented evidence of disease-causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

GROUND APPLICATION

Use a vehicle-mounted cold aerosol ULV sprayer to apply the product. Direct the spray equipment nozzle to provide even distribution of the product. For best results, apply perpendicular to the wind direction using a swath width of 300 ft. Spray equipment must be adjusted so that the volume median diameter (VMD) is between 10-30 microns ($10\mu \leq D_{v0.5} \leq 30\mu$) and that 90% of the spray is contained in droplets smaller than 50 microns ($D_{v0.9} < 50\mu$). Directions from the equipment manufacturer or vendor, pesticide registrant, or test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

The appropriate application rate can be achieved by altering the dilution rate of Zenivex™. Refer to the following chart for examples.

| Application rate pound A.I. per acre | Vehicle Speed MPH | Flow rates | | | |
|--|-------------------------|------------|-------------------|-------------------|---------------------|
| | | Undiluted | Diluted 1 to 1 | Diluted 1 to 2 | Diluted 1 to 4.5 |
| | | Oz/minute | Oz/minute | Oz/minute | Oz/minute |
| 0.00175 | 10 | 0.9 | 1.8 | 2.74 | 4.57 |
| | 15 | 1.4 | 2.7 | 5.40 | 9.90 |
| | 20 | 1.8 | 3.6 | 7.20 | 13.20 |
| 0.00350 | 10 | 1.8 | 3.6 | 5.48 | 9.14 |
| | 15 | 2.7 | 5.4 | 10.80 | 19.80 |
| | 20 | 3.6 | 7.2 | 14.40 | 26.40 |
| 0.00700 | 10 | 3.6 | 7.2 | 10.78 | 19.80 |
| | 15 | 5.4 | 10.8 | 16.18 | 39.60 |
| | 20 | 7.2 | 14.4 | 21.50 | 52.80 |

Use the higher label rates when spraying areas where dense vegetation is present. Conduct applications when temperatures are between 50-95°F.

Backpack Sprayer ULV Application

Apply Zenivex™ diluted or undiluted through non-thermal ULV backpack sprayer capable of applying the product in the 10 to 30 micron range. Apply product to the area as evenly as possible. Apply at the rate of 0.00175 to 0.0070 pounds etofenprox per acre.

Urban ULV Mosquito Control Applications: For control of resting or flying adult mosquitoes, biting flies and non-biting midges in areas such as utility tunnels, sewers, storm drains and catch basins, pipe chases, underground basements, underground passages, parking decks, crawl spaces or uninhabited buildings, apply Zenivex™ using mechanical foggers, hand-held or truck-mounted ULV equipment, thermal foggers or other spray equipment suitable for this application. Apply Zenivex™ at rates up to but not exceeding 0.007 pounds of etofenprox per acre.

Thermal Fogging Application

Apply using a truck, dolly-mounted, handheld, or other thermal fogging equipment. Following the equipment manufacturer's instructions, apply this product at a rate of 0.00175 to 0.0070 pounds etofenprox per acre. Direct fog to areas where mosquitoes and other pests are located. The volume median diameter (VMD) of droplets produced by thermal foggers is less than 60 microns ($D_{v0.5} < 60\mu$) and 90% of the spray is contained in droplets smaller than 100 microns ($D_{v0.9} < 100\mu$).

AERIAL APPLICATION

Apply Zenivex™ aerially, either diluted or undiluted, by fixed wing or rotary aircraft. Apply at the rate of 0.00175 to 0.0070 pounds of etofenprox per acre. Apply using ULV equipped and capable aircraft. Spray equipment must be adjusted so that the volume median diameter (VMD) produced is less than 60 microns ($D_{v0.5} < 60\mu$) and that 90% of the spray is contained in droplets smaller than 100 microns ($D_{v0.9} < 100\mu$). The effects of flight speed and, for non-rotary nozzles, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant, or test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated. Do not apply Zenivex™ at altitudes below 100 feet. Apply at altitudes from 100-300 feet. Apply when wind speed on the ground is ≥ 1 mph. Apply when labeled insects are most active. For best results, use Global Positioning System (GPS) equipped aircraft. **In Florida:** Do not apply by aircraft except with the approval of the Florida Department of Agriculture and Consumer Services.

PESTICIDE STORAGE AND DISPOSAL

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

STORAGE AND SPILL PROCEDURES: Store upright at room temperature. Avoid exposure to extreme temperatures. In case of spill or leakage, soak up with an absorbent material such as sand, sawdust, earth, fuller's earth, etc. Dispose of with chemical waste.

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

CONTAINER DISPOSAL: Refillable 30 Gallon Drums: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. If not refilled, offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration. **To clean the container before final disposal,** triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container $\frac{1}{4}$ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Non-refillable 2.5 gallon containers:** Non-refillable container. Do not reuse or refill this container. Triple rinse (or equivalent), promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain container for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full of water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank. Drain container for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Once triple rinsed, recycle if available, or puncture and dispose of in a sanitary landfill, or by incineration.

MATERIAL SAFETY DATA SHEET
Zenivex E20

Manufacturer: Wellmark International
Address: 1501 East Woodfield Road, Suite 200-West Schaumburg, IL 60173
Emergency Phone: 800-248-7763
Transportation Emergency Phone: CHEMTREC: 1-800-424-9300

1. CHEMICAL PRODUCT INFORMATION

Product Name: Zenivex E20
Chemical Name/Synonym: Etofenprox
Chemical Family: Non-ester Pyrethroid
Formula: $C_{26}H_{28}O_3$
EPA Registration No.: 2724-791
RF Number: RF2056

2. COMPOSITION / INFORMATION ON INGREDIENTS

| <u>Component (chemical, common name)</u> | <u>CAS Number</u> | <u>Weight</u> | <u>Tolerance</u> |
|---|-----------------------|---------------|-----------------------------------|
| Etofenprox: 1-[[2-(4-ethoxyphenyl)-2-methylpropoxy]methyl]-3-phenoxybenzene | 80844-07-1 | 20.0% | None established |
| Other Ingredients (non-hazardous and/or trade secret) | | 80.0% | PEL & TLV: 5 mg/m ³ |

3. HAZARD INFORMATION

PRECAUTIONARY STATEMENTS
KEEP OUT OF REACH OF CHILDREN
CAUTION
HAZARDOUS TO HUMANS AND DOMSTIC ANIMALS

PRIMARY ROUTE OF ENTRY Dermal/Eye: Yes. Oral: No. Inhalation: Yes.

ACUTE TOXICITY Oral: No specific hazard identified.
 Dermal: No specific hazard identified.
 Inhalation: No specific hazard identified.

OTHER TOXICOLOGICAL INFORMATION

Skin Irritation: Repeated exposure to etofenprox can cause skin irritation.
Eye Irritation: Causes moderate eye irritation.
Sensitizer: Not a dermal sensitizer.

4. FIRST AID MEASURES

Eye: 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: Contains petroleum distillates. Vomiting may cause aspiration pneumonia.

5. FIRE FIGHTING MEASURES

- NFPA Rating: Health: 2 Fire: 2 Reactivity: 0
- Flammability Class: Class III A Combustible Liquid.
- Flash Point: 178° F (81°C).
- Explosive Limits (% of Volume): Not available.
- Extinguishing Media: Dry chemical, CO₂, foam, water fog. Do not use water jet, handle as an oil fire.
- Special Protective Equipment: Firefighters should wear full protective clothing including self-contained breathing apparatus.
- Fire Fighting Procedures: Use water fog to cool fire exposed containers. USE WATER CAREFULLY NEAR EXPOSED/BURNING LIQUIDS. May cause frothing and splashing of hot material. Handle as an oil fire. Do not allow run-off to enter waterways or sewers. This product is toxic to aquatic organisms.
- Combustion Products: Oxides of carbon.
- Unusual Fire/Explosion Hazards: Burning fluid may evolve irritating/noxious fumes.

6. ACCIDENTAL RELEASE MEASURES

- Steps to be taken: Use appropriate personal protective equipment. Eliminate sources of ignition. Floor may be slippery: use care to avoid falling. Absorb spill with an inert material. Place in container for disposal. Do not allow spill to enter waterways or sewers. This product is toxic to aquatic organisms.
- Absorbents: Clay granules, sawdust, dirt, or equivalent.
- Incompatibles: Strong oxidants and acidic agents.

7. HANDLING AND STORAGE

- Handling: Wash hands with soap and water after handling material. Avoid contact with skin, eyes, or clothing.
- Storage: Do not contaminate water, food, or feed, by storage. Store upright at room temperature. Avoid exposure to extreme temperatures.

8. EXPOSURE CONTROL / PERSONAL MEASURES

- Exposure Limits: Severely hydrotreated paraffinic oil. OSHA PEL 5 mg/m³. ACGIH TLV 5 mg/m³.
- Ventilation: Use with ventilation adequate to maintain airborne concentrations below recommended exposure limits.
- Personal Protective Equipment: Use appropriate precautions to avoid contact with skin, eyes or clothing. Use splash goggles or safety glasses. Chemical resistant gloves are recommended. If ventilation is inadequate, or airborne concentrations exceed recommended exposure limits, respiratory protection suitable for use with oil mists may be required.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance and Odor: Clear, pale yellow liquid with citrus odor.
- Boiling Point: Not known.
- Melting Point: Not applicable.
- Vapor Pressure (mm Hg): Not known.
- Vapor Density (Air = 1): Not known.
- Specific Gravity: 0.891.
- Bulk Density: 7.4 lbs per gallon.
- Solubility: Not soluble in water.
- Evaporation Rate: Not known.
- pH: 3.0.

10. STABILITY AND REACTIVITY

- Stability: Stable.
- Reactivity: Not reactive.
- Incompatibility w/ Other Materials: No incompatibilities known except with strong oxidants such as hypochlorites.
- Decomposition Products: Oxides of carbon from combustion.
- Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

- Acute oral toxicity (rat): LD50 >5,000 mg/kg
- Acute dermal toxicity: LD50 >5,000mg/kg
- Acute inhalation toxicity: 4-hr LC50 >2 mg/L
- Skin Irritation: Very slight irritation
- Eye irritation: Minimally irritating
- Dermal Sensitization: Not a sensitizer

SUBCHRONIC TOXICITY [Specific to Active Ingredient(s)]

Etofenprox is a mild skin irritant after 4-weeks of treatment. No systemic toxicity from dermal exposure was observed at doses up to 1000 mg/kg/day.

CHRONIC TOXICITY [Specific to Active Ingredient(s)]

Etofenprox is not listed as a carcinogen by NTP or IARC and is not regulated by OSHA.

In rats the target organs are the liver and thyroid. The NOAEL for chronic toxicity is 3.7 mg/kg/day for male rats. The target organ in mice is the kidney. The NOAEL is 3.1 mg/kg/day for mice.

DEVELOPMENTAL/REPRODUCTIVE TOXICITY [Specific to Active Ingredient(s)]

Etofenprox is not a teratogen. It does not have adverse effects on reproduction.

MUTAGENICITY [Specific to Active Ingredient(s)]

Etofenprox is not a mutagen.

12. ECOLOGICAL INFORMATION

Toxic to aquatic organisms, including fish and invertebrates.
The product is toxic to bees exposed to direct treatment on blooming crops and weeds.

ECOTOXICITY [Active Ingredients Only]

Etofenprox

Acute Toxicity: fish: LC₅₀ (trout): 3.3 ppb, (bluegill): 8.5 ppb.

13. DISPOSAL CONSIDERATIONS

Wastes resulting from use of this product should be disposed of in accordance with all federal, state and local requirements. For additional regulatory information, see section 15 of this document.

14. TRANSPORT INFORMATION

DOT49CFR Description: Not Regulated.

Freight Classification: Insecticide NOI NMFC 102120 cl. 60.

15. REGULATORY INFORMATION

CERCLA (Superfund): Not regulated.

RCRA: Not a characteristic or listed hazardous waste.

SARA 311/312 HAZARD CATEGORIES

Immediate Health: Yes.

Delayed Health: Yes.

Fire: Yes.

Sudden Pressure: No.

Reactivity: No.

The information presented herein, while not guaranteed, was prepared by technically knowledgeable personnel and to the best of our knowledge is true and accurate. It is not intended to be all inclusive and the manner and conditions of use and handling may involve other or additional considerations.