

# 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%
<b>TOTAL</b>	<b>100.0%</b>

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

\*\*U.S. Patent No. 6,121,478

**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

SEE BOOKLET FOR ADDITIONAL PRECAUTIONARY  
STATEMENTS AND USE DIRECTIONS

Sold By



FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104

Product of Denmark

Net Contents: 2.5 Gallons

7-24-2017

<b>FIRST AID</b> <b>CONTAINS AN ORGANOPHOSPHATE THAT INHIBITS CHOLINESTERASE</b>	
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by the poison-control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF IN EYES:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with warm water for 15 to 20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.	
<b>NOTE TO PHYSICIAN:</b> 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 Laminate, Butyl Rubber  $\geq 14$  mils, Nitrile Rubber  $\geq 14$  mils, Neoprene Rubber  $\geq 14$  mils, Natural Rubber  $\geq 14$  mils, Polyethylene, Polyvinyl Chloride (PVC)  $\geq 14$  mils, or Viton  $\geq 14$  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.

### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Fyfanon EW 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 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:

##### 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. 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 (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.

## 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 INFORMATION

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

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

Fyfanon EW 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 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 (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 at the rate of 0.03 to 0.06 lb ai / A (1.05 to 2.1 fluid ounces Fyfanon EW 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 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 1 part concentrate + 3.7 parts water to deliver 0.03 lb AI/Acre. Dilute Fyfanon EW 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 1 part concentrate + 8.8 parts water to deliver 0.03 lb AI/Acre. Dilute Fyfanon EW 1 part concentrate + 3.7 parts water to deliver 0.06 lb AI/Acre.

Dilution 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 for quantity of finished spray required		Fl.oz of Fyfanon EW 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 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.

**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.

**SAFETY DATA SHEET**  
**Fyfanon EW Insecticide**

**SDS # :** FO002270-A  
**Revision date:** 2017-07-17  
**Format:** NA  
**Version** 1.01



**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(dimethoxyphosphinothioylthio)succinate (IUPAC Name)

**Active Ingredient(s)** Malathion

**Formula** C<sub>10</sub>H<sub>19</sub>O<sub>6</sub>PS<sub>2</sub> (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 / 424 9300 (CHEMTREC - U.S.A.)  
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)

Medical Emergencies:  
1 800 / 331-3148 (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.

<b>Chemical name</b>	<b>CAS-No</b>	<b>Weight %</b>
Malathion Technical	121-75-5	40.9
Sodium Hydroxide	1310-73-2	1-5

Synonyms are provided in Section 1.

#### **4. FIRST AID MEASURES**

<b>Eye Contact</b>	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.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
<b>Inhalation</b>	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.
<b>Ingestion</b>	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.
<b>Most important symptoms and effects, both acute and delayed</b>	Malathion is a cholinesterase inhibitor affecting the central and peripheral nervous systems producing respiratory depression.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	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**

<b>Suitable Extinguishing Media</b>	Dry chemical, Carbon dioxide (CO <sub>2</sub> ), Water spray, Foam. Avoid heavy hose streams.
<b>Specific Hazards Arising from the Chemical</b>	None known
<b>Hazardous Combustion Products</b>	The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as: Dimethyl sulphide, methyl mercaptan, Sulfur dioxide, Carbon monoxide, Carbon dioxide (CO <sub>2</sub> ), phosphorus pentoxide.
<b>Explosion data</b>	
<b>Sensitivity to Mechanical Impact</b>	No information available.
<b>Sensitivity to Static Discharge</b>	Yes.
<b>Protective equipment and precautions for firefighters</b>	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**

<b>Personal Precautions</b>	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.
<b>Other</b>	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
<b>Environmental Precautions</b>	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 feedings. 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**

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

**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.
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### 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

**Fyfanon EW Insecticide**

SDS # : FO002270-A

Revision date: 2017-07-17

Version 1.01

	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.

**13. 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.

**14. TRANSPORT INFORMATION**

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

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

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

**ICAO/IATA**

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

**IMDG/IMO**

<b>UN/ID no</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Hazard class</b>	9
<b>Packing Group</b>	III
<b>EmS No.</b>	F-A, S-F
<b>Marine Pollutant</b>	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 EW Insecticide**SDS # : FO002270-A  
Revision date: 2017-07-17  
Version 1.01

Chemical name	California Prop. 65
Malathion Technical - 121-75-5	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Malathion Technical 121-75-5	X	X	X
Sodium Hydroxide 1310-73-2	X	X	X

**International Inventories**

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Malathion Technical 121-75-5		X	X	X	X	X	X	X
Sodium Hydroxide 1310-73-2	X	X	X	X	X	X	X	X

**Mexico - Grade** Serious risk, Grade 3

Chemical name	Carcinogen Status	Mexico
Malathion Technical		Mexico: TWA 10 mg/m <sup>3</sup>
Sodium Hydroxide		Mexico: Ceiling 2 mg/m <sup>3</sup>

**CANADA****WHMIS Statement**

This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

**WHMIS Hazard Class** D2B - Toxic materials**16. OTHER INFORMATION**

NFPA	Health Hazards 2	Flammability 2	Instability 0	Special Hazards -
HMIS	Health Hazards 2*	Flammability 2	Physical hazard 0	Personal Protection X

*\*Indicates a chronic health hazard.***NFPA/HMIS Ratings Legend** Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0Revision date: 2017-07-17  
Reason for revision: Initial Release**Disclaimer**

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## Fyfanon EW Insecticide

SDS # : FO002270-A  
Revision date: 2017-07-17  
Version 1.01

applicable where such product is used in combination with any other materials or in any process. Use of this product is regulated by the U.S. Environmental Protection Agency (EPA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Further, since the conditions and methods of use are beyond the control of FMC Corporation, FMC corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

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**End of Safety Data Sheet**