

SAFETY DATA SHEET
Fyfanon ULV Mosquito

SDS # : FO002161-1-A
Revision date: 2018-06-28
Format: NA
Version 1.01



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Fyfanon ULV Mosquito

Other means of identification

Product Code(s) FO002161-1-A

Legacy Product Code 300

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

Active Ingredient(s) Malathion

Chemical Family Organophosphate

PCP # 9337

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 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)

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

GHS Label elements, including precautionary statements**EMERGENCY OVERVIEW****Warning****Hazard Statements**

H315 - Causes skin irritation

H320 - Causes eye irritation

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

**Precautionary Statements - Prevention**

P264 - Wash hands thoroughly after handling

P280 - Wear protective gloves

P273 - Avoid release to the environment

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

P363 - Wash contaminated clothing before reuse

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P310 - Immediately call a POISON CENTER or doctor

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

P391 - Collect spillage

Precautionary Statements - Storage

P405 - Store locked up

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

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.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical Family**

Organophosphate.

Chemical name	CAS-No	Weight %
Malathion Technical	121-75-5	60-100

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	<p>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.</p> <p>ANTIDOTE: If symptoms are present, administer atropine sulphate, which often is a lifesaving antidote, in large doses, TWO to FOUR mg intravenously or intramuscularly as soon as possible. Repeat at 5 to 10 minute intervals until signs of atropinisation appear and maintain full atropinisation until all organophosphate is metabolized. Relapse can occur after initial improvement. VERY CLOSE SUPERVISION OF THE PATIENT IS INDICATED FOR AT LEAST 48 HOURS DEPENDING ON THE SEVERITY OF THE POISONING.</p>

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Carbon dioxide (CO ₂), Dry chemical, Water spray, Foam. Avoid heavy hose streams.
Specific Hazards Arising from the Chemical	This product is considered non-flammable. Material will decompose rapidly when exposed to heat (>212° F/100° C) and flame, increasing the risk of explosion. Heat of decomposition may cause closed containers to build up pressure and explode.
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	Not expected to be sensitive to mechanical impact.
Sensitivity to Static Discharge	Not expected to be sensitive to static discharge.
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 FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

Environmental Precautions	Contain the spill to prevent any further contamination of surface, soil or water. Try to prevent the material from entering drains or water courses.
Methods for Containment	Wear the full Personal Protection Equipment, avoiding inhalation or contact with skin or eyes. Dike to contain spill with inert material which is absorbent and non-combustible (clay, sand or soil). Then soak up with absorbent material inward from the edges.
Methods for cleaning up	Remove all sources of ignition. Ventilate area of release. Stop the spill at source if it is safe to do so. Contain and absorb spilled material with inert, non-combustible absorbent material, such as sand. Sweep up and shovel into suitable containers for disposal. For a water spill, confine the spill immediately with booms. Notify the appropriate authorities as required. Carefully cover spilled material with soda ash or quicklime to neutralize. Do not flush into surface water or sanitary sewer system. For large spills on surfaces other than pavement (e.g. soil or sand), spills may be handled by digging up and removing the affected surface and placing it in approved containers.

7. HANDLING AND STORAGE

Handling	Keep away from open flames, hot surfaces and sources of ignition. Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. 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. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling. Refer to Section 8.
Storage	Keep at a temperature not exceeding 25°C. The product should never be heated above 55°C. Local heating above this temperature should be avoided as well. 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 feedingstuffs. Keep/store only in original container. Keep in properly labeled containers.
Packaging material	Always keep in containers made of the same materials as the supply container.
Incompatible products	Strong alkalis, Amines, Strong oxidizing agents. The product can corrode iron, steel, tin plate and copper and is rapidly hydrolyzed at pH > 7.0.

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
Chemical name	British Columbia	Quebec	Ontario TWAEV	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

Appropriate engineering controls

Engineering measures	Apply technical measures to comply with the occupational exposure limits (if listed above). When working in confined spaces (tanks, containers, etc.), make sure there is an adequate source of air for breathing and wear the recommended equipment. Ventilate all transport vehicles prior to discharge.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Safety glasses with side-shields. Maintain eye wash fountain and quick-drench facilities in
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work area.

Skin and Body Protection

Use coveralls or long-sleeved uniform and head covering. For large exposures as in case of a spill, use barrier suit covering the entire body, such as a waterproof PVC suit. Leather items, including shoes, belts and watchbands, that have been contaminated should be removed and destroyed. Wash all work clothing before reuse (separately from clothing commonly used).

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

Do not breathe vapors, mist or gas. 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

Avoid contact with skin, eyes and clothing. Must have clean water available for washing in case of eye or skin contamination. Wash skin before eating, drinking, chewing gum, or using snuff. Shower after work. Remove contaminated clothing and wash before reuse. Wash all work clothing separately; do not mix with household laundry. 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.

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	Colorless, Light yellow
Odor	Aromatic
Odor threshold	No information available
pH	3.7-3.8 @ 20 °C (when equal amounts of malathion and distilled water are dispersed)
Melting point/freezing point	2.85 °C
Boiling Point/Range	156 °C @ 0.7 mm Hg (Decomposes)
Flash point	163 °C (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	3.4 x 10 ⁻⁶ @ 25°C 1.4 x 10 ⁻⁴ @ 45°C
Vapor density	No information available
Density	1.23 g/mL @ 20°C
Specific gravity	1.23 g/mL @ 20°C
Water solubility	Emulsifies
Solubility in other solvents	Solubility of malathion @20°C in: ethyl acetate = >250 g/L= 57-67 g/L= 148.2 mg/L @ 25°C K _{ow} = 560 (n-octanol/water)
Partition coefficient	278 °C
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	Not explosive
Oxidizing properties	Non-oxidizing
Molecular weight	No information available
Bulk density	10.26 lb/gal

10. STABILITY AND REACTIVITY

Reactivity	None under normal use conditions
Chemical Stability	<p>Malathion will decompose rapidly when heated to temperatures above 140°C, significantly increasing the risk of explosion. Direct local heating such as electric heating or by steam must be avoided.</p> <p>The decomposition is dependent 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 sulphide and methyl mercaptan.</p>
Possibility of Hazardous Reactions Hazardous polymerization	None under normal processing. Decomposition can occur on exposure to heat or moisture. Hazardous polymerization may occur.
Conditions to avoid	Temperatures above 25°C. 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. The product can corrode iron, steel, tin plate and copper and is rapidly hydrolyzed at pH > 7.0.
Hazardous Decomposition Products	See Section 5 for more information.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral	: ~ 5500 mg/kg (rat)
LD50 Dermal	: > 2000 mg/kg (rabbit)
LC50 Inhalation	: > 5.2 mg/L 4 hr (rat)

Serious eye damage/eye irritation	Slightly irritating to eyes.
Skin corrosion/irritation	Slightly irritating.
Sensitization	Non-sensitizing

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 is very toxic to fish, aquatic invertebrates, aquatic life stages of amphibians and insects. It is less toxic to aquatic plants, birds and soil macro- and microorganisms.

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: 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

Product is not regulated if containers are less than 100 pounds. If containers are 100 pounds or more, the classification below applies:

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, Marine pollutant, RQ

TDG

UN/ID no	UN3082
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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, Marine pollutant, 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, Marine pollutant, RQ

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, Marine pollutant, RQ

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	60-100	1.0

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic health hazard Yes
Fire hazard No
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

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	

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.

Harmful if absorbed through skin.

Harmful if inhaled.

Avoid contact with eyes, skin, or clothing.

Avoid breathing spray mist.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

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

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

Mexico - Grade Moderate risk, Grade 2

Chemical name	Carcinogen Status	Mexico
Malathion Technical		Mexico: TWA 10 mg/m ³

CANADA

WHMIS Statement

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR

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:

WHMIS Hazard Class

D2B - Toxic materials

F - Dangerously reactive material



16. OTHER INFORMATION

NFPA	Health Hazards 2	Flammability 1	Instability 1	Special Hazards -
HMIS	Health Hazards 2	Flammability 1	Physical hazard 0	Personal Protection X

**Indicates a chronic health hazard.*

NFPA/HMIS Ratings Legend

Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date: 2018-06-28
Reason for revision: (M)SDS sections updated

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Prepared By:

FMC Corporation

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End of Safety Data Sheet