

SAFETY DATA SHEET
Fyfanon 57% EC

SDS # : FO002137-A
Revision date: 2018-03-13
Format: NA
Version 1.03



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Fyfanon 57% EC

Other means of identification

Product Code(s) FO002137-A

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

Active Ingredient(s) 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 / 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)

Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1B
Specific target organ toxicity (single exposure)	Category 1
Aspiration toxicity	Category 1

Flammable liquids	Category 4
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GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning

Hazard Statements
 H304 - May be fatal if swallowed and enters airways
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H336 - May cause drowsiness or dizziness
 H227 - Combustible liquid
 H410 - Very toxic to aquatic life with long lasting effects



Precautionary Statements - Prevention

- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P273 - Avoid release to the environment

Precautionary Statements - Response

- 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
- P370 + P378 - In case of fire: Use Carbon dioxide (CO2), Dry chemical, Alcohol-resistant foam, Water spray for extinction
- P391 - Collect spillage

Precautionary Statements - Storage

- P403 + P235 - Store in a well-ventilated place. 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

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Organophosphate.

Chemical name	CAS-No	Weight %
Malathion Technical	121-75-5	57
Naphtha (petroleum), heavy aromatic	64742-94-5	20-35

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. Call a poison control center or doctor for further 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 further treatment advice.
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 poison control center or doctor for further treatment advice.
Ingestion	Call a physician or poison control center immediately. Do not give any liquid to the person. 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.
Most important symptoms and effects, both acute and delayed	May cause eye irritation. Causes skin irritation. The first symptom 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.
Indication of immediate medical attention and special treatment needed, if necessary	Malathion is a cholinesterase inhibitor affecting the central and peripheral nervous systems and producing cardiac and respiratory depression. Antidote: Administer atropine sulfate in large doses. TWO TO FOUR mg intravenously or intramuscularly as soon as cyanosis is overcome. Repeat at 5 to 10 minute intervals until signs of atropinization appear. 2-PAM chloride is a pharmacological antidote and maybe administered as an adjunct to, but not a substitute for, atropine, which is a symptomatic and often lifesaving antidote. DO NOT GIVE MORPHINE OR TRANQUILIZERS. 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. Contains petroleum distillate. May pose an aspiration pneumonia hazard.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Dry chemical, carbon dioxide, water spray or regular foam.
Specific Hazards Arising from the Chemical	In the event of fire and/or explosion, do not breathe fumes. The product (malathion) will decompose rapidly when heated to temperatures above 280° F (140° C), significantly increasing the risk of explosion. Direct local heating such as electric heating or by steam must be avoided.
Hazardous Combustion Products	The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as: Dimethyl sulphide, Sulfur dioxide, Carbon monoxide, phosphorus pentoxide.
Explosion data	
Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind.

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 Keep material out of lakes, streams, ponds, and sewer drains. Keep out of waterways. Keep people and animals away from and upwind of spill/leak.

Methods for Containment Dike to confine spill and absorb with non-combustible absorbent such as clay, sand or soil. Remove all sources of ignition. Clean area with detergent and plenty of water. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Spills which soak into the ground should be dug up and transferred to suitable containers.

Methods for cleaning up Pick up and transfer to properly labeled containers. Clean up the area with plenty of water. Prevent product and washings from entering drains, sewers or surface water due to high toxicity to aquatic organisms.

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. Avoid contact with skin, eyes and clothing. Avoid contact by using personal protective equipment.

Storage Keep away from open flames, hot surfaces and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not contaminate other materials, or allow this material to be contaminated, by improper storage or handling. Store in original container. The product should never be heated above 55°C. Local heating above this temperature should be avoided as well. Product should be stored below 77°F.

Incompatible products None known

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. 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 Tightly fitting safety goggles. Provide emergency on-site eyewash.

Skin and Body Protection Wear long-sleeved shirt, long pants, socks, and shoes.

Hand Protection Rubber/latex/neoprene or other suitable chemical resistant gloves.

Respiratory Protection For dust, splash, mist or spray exposures wear a filtering mask.

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	Liquid suspension
Physical State	Liquid
Color	Light brown
Odor	Aromatic
Odor threshold	No information available
pH	Acidic
Melting point/freezing point	< 32° F (0° C)
Boiling Point/Range	No information available
Flash point	65 °C / 149 °F : (PMCC)
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	4.5 x 10 ⁻⁴ Pa @ 25° C (malathion) 1.9 x 10 ⁻² Pa @ 45° C (malathion)
Vapor density	No information available
Density	1.067 g/mL
Specific gravity	No information available
Water solubility	148.2 mg/L @ 25° C
Solubility in other solvents	Solubility of Malathion at 20° C in: acetone >250 g/L methanol >250 g/L ethyl acetate >250 g/L 1,2-dichloroethane >250 g/L xylene >250 g/L heptanes 57 – 67 mg/L
Partition coefficient	(Malathion in n-octanol/water): log Kow=2.75
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	No information available
Molecular weight	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity	None under normal use conditions
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks
Incompatible materials	Strong alkalis and strong oxidizing compounds. The product can corrode iron, steel, tin plate and copper. Malathion is rapidly hydrolyzed at pH>7.0. The product can react with caustic (basic) materials in an acid-base chemical neutralization reaction which may be hazardous because of heat release. . None known.
Hazardous Decomposition Products	See Section 5 for more information.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral > 5000 mg/kg
 LD50 Dermal > 5000 mg/kg
 LC50 Inhalation > 5.1 mg/L 4 hr

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

Information on toxicological effects

Symptoms See Section 4 for more information.

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

Mutagenicity Not expected to be mutagenic in humans
 Carcinogenicity Did not show carcinogenic effects in animal experiments
 Reproductive toxicity Not expected to have reproductive effects.
 Developmental toxicity Not teratogenic in animal studies.
 STOT - single exposure No information available.
 STOT - repeated exposure No information available.
 Aspiration hazard This product presents 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

Toxic to aquatic life

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.

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 The classification below pertains to Non-Bulk shipments > 19.5 gallons and to Bulk packaging.

UN/ID no NA1993
Proper Shipping Name Combustible liquid, n.o.s, Aromatic hydrocarbons
Packing Group III
Marine Pollutant Malathion.
Description NA1993, Combustible liquid, n.o.s., III, RQ (Malathion), Marine Pollutant

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

IMDG/IMO

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

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	57	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

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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
Acetic Anhydride 108-24-7	5000 lb			X
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
Acetic Anhydride 108-24-7	5000 lb 2270 kg	
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:

WARNING

Harmful if swallowed.

Causes substantial but temporary eye injury.

Avoid contact with skin, eyes and clothing.

May be dangerous for the environment.

This product is toxic to aquatic organisms.

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
Naphtha (petroleum), heavy aromatic 64742-94-5	X	X	X		X	X	X	X

Chemical name	Carcinogen Status	Mexico

Malathion Technical	Mexico: TWA 10 mg/m ³
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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 See section 2 for more information

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 = 0

Revision date: 2018-03-13
Reason for revision: (M)SDS sections updated

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End of Safety Data Sheet