



## SAFETY DATA SHEET

### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

**Product identifier:** MALATHION 57% Low VOC

**Product use:** Insecticide.

**Supplier's name and address:**

**FMC Corporation**

2929 Walnut Street  
Philadelphia, PA 19103  
(215) 299-6000 (General Information)  
msdsinfo@fmc.com (E-mail General Information)

**Manufacturer's name and address:**

Refer to supplier.

**Emergency Telephone #:** 1-800-424-9300 (24 Hr. Chemtrec Number)

1-800-331-3148 (Medical Emergencies-PROSAR)

**SDS Prepared by:** FMC Corporation

**SDS Preparation date:** April 29, 2013

### SECTION 2 — HAZARDS IDENTIFICATION

**GHS Signal Word:**

Warning

**Classification:**

Health	Environmental	Physical
Skin irritation – Category 2 Eye irritation – Category 2A Specific Target Organ Toxicity (Repeated Exposure) – Category 2	Aquatic Toxicity – Chronic 2	Not applicable

**GHS Pictogram:**



**Hazard Statements:**

Causes skin irritation.

Causes eye irritation.

May cause damage to organs (nervous system) through prolonged or repeated exposure.

**Precautionary Statements:**

Wash skin thoroughly after handling.

Wear protective gloves.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Do not breathe mist/vapors/spray.

Get medical advice/attention if you feel unwell.

Dispose of contents/container to a waste disposal facility or pesticide disposal program.

Very toxic to aquatic life with long lasting effects.

### SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>% (weight)</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>
Malathion (O,O-dimethyl phosphorodithioate of diethyl mercaptosuccinate)	121-75-5	57	1 mg/m <sup>3</sup> (inhalable fraction)	15 mg/m <sup>3</sup>
Inert ingredients:				
Aromatic hydrocarbons	64742-94-5	2.5	NE	NE
Containing naphthalene	91-20-3		52 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>
Acetic anhydride	108-24-7	2	1 ppm	20 mg/m <sup>3</sup>
				5 ppm
Calcium	11117-11-6	2	NE	NE
(bis)tetrapropylenebenzenesulphonate				
NE= None established				

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

### SECTION 4 — FIRST AID MEASURES

	This product is an organophosphate and a cholinesterase inhibitor.
<b>IF SWALLOWED:</b>	Immediately call a poison control center or doctor. Do not induce vomiting unless told to 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.
<b>IF INHALED:</b>	Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call poison control center or doctor for treatment advice.
<b>IF ON SKIN OR CLOTHING:</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.
<b>IF IN EYES:</b>	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 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 when going for treatment.

**Note to Physician:** Malathion is a cholinesterase inhibitor affecting the central and peripheral nervous systems and producing cardiac and respiratory depression. Antidote: Administer atropine sulphate 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. 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, DEPENDING ON THE SEVERITY OF POISONING. Contains petroleum distillate. May pose an aspiration pneumonia hazard.

### SECTION 5 — FIRE FIGHTING MEASURES

**Flash point (Method):** 253 °F (123 °C)

**Flammable limits (% by volume):** Not applicable

**Explosive properties:** Not explosive

**Suitable extinguishing media:** Small fires: dry chemical, carbon dioxide. Large fires: water spray or foam. Avoid heavy hose streams.

**Special fire-fighting procedures/equipment:** Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Fire fighters should wear self-contained breathing apparatus and protective clothing.

**Special hazards arising from the substance or mixture:** The essential breakdown products are volatile, toxic, malodorous, irritant and inflammable compounds such as dimethyl sulphide, methyl mercaptan, sulphur dioxide, carbon monoxide, carbon dioxide and phosphorous pentoxide.

## SECTION 6 — ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Observe all protection and safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill, this may mean wearing respirator, face mask or safety glasses, chemical resistant clothing, protective gloves and rubber boots when cleaning up spills. See Section 8, Personal Protection. Stop the source of the spill immediately if safe to do so. Remove sources of ignition. It is recommended to have a predetermined plan for the handling of spills. Empty, closed containers for the collection of spills should be available.

**Environmental precautions:** Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

**Spill response/Cleanup:** If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, hydrated lime, Fuller's earth or other absorbent clays. Collect contaminated absorbent in suitable containers. Clean area with soda lye and much water. Absorb wash liquid onto suitable absorbent as well and collect in suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and placed in suitable containers.

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. Refer to Section 13 for disposal.

**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: 1-800-424-8802).

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

## SECTION 7 — HANDLING AND STORAGE

**Safe handling procedures:** Avoid contact with skin, eyes, and clothing. Adequate ventilation or local exhaust ventilation is required. Do not wear heavily contaminated clothing. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and shoes. Take a shower, using water and soap. Wear only clean clothes when leaving the job. Wash protective clothing and protective equipment with water and soap after use.

**Storage recommendations:** Store in original unopened container in a secure, dry place. The product should never be heated above 131° F (55° C) and should not be stored for long periods of time at a temperature in excess of 77° F (25° C). Do not contaminate with other pesticides or fertilizers.

**Other information:** Completely empty bag into application equipment. Dispose of empty bag in a sanitary landfill or by incineration as allowed by state and local authorities. Avoid inhalation of smoke if incinerated. Do not discharge to the environment. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See Section 13 for disposal.

## SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Ventilation and engineering controls:** If handled indoors, provide mechanical exhaust ventilation to minimize concentrations.

**Protective gloves:** Wear chemical-resistant gloves: barrier laminate, butyl rubber, nitrile rubber, or viton.

**Eye protection:** Wear protective eyewear, such as safety glasses or chemical goggles.

**Other protective equipment:** Wear long-sleeved shirt and long pants, shoes and socks.

**Permissible exposure levels:** See Section 3.

**General hygiene considerations:** Follow manufacturer's instructions for cleaning and maintaining PPE. If not 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. 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.

**Exposure limits:** See Section 3 – Composition/Information on Ingredients.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Light yellow liquid

**Odor:** Acidic smell of mixed chemicals

**Odor threshold:** ND

**pH:** ND; product is acidic.

**Melting point:** Below 32° F (0° C)

**Freezing point:** ND

**Initial boiling point and boiling range:** ND

**Flash point:** 253° F (123° C)

**Evaporation rate:** ND

**Flammability:** NA

**Upper/lower flammability or explosive limits:** NA

**Vapor pressure:**     **Malathion:**     4.5 x 10<sup>-4</sup> Pa @ 25° C  
  1.9 x 10<sup>-2</sup> Pa @ 45° C

**Vapor density:** ND

**Relative density:** ND; Density: 1.067 g/mL

**Solubility(ies):**     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
water	148.2 mg/l @ 25° C

**Partition coefficient (n-octanol/water):**     **Malathion:**     log K<sub>ow</sub>=2.75

**Auto-ignition temperature:** NA

**Decomposition temperature:** ND

**Viscosity:** ND

ND: Not determined

NA: Not applicable

## SECTION 10 — REACTIVITY AND STABILITY DATA

**Stability and reactivity:** This product is stable under the recommended storage and handling conditions described in Section 7.

**Malathion** will decompose rapidly when heated to temperatures above 284° F (140° C). Significantly increasing the risk of explosion. Direct local heating such as electric heating or by steam must be avoided.

**Hazardous polymerization:** Not known to occur.

**Conditions to avoid:** Storage at too high temperatures may induct formation of the more toxic and synergistic contaminant isomalathion. Heating of the product will produce harmful and irritant vapors.

**Materials to avoid (incompatibles):** This product can react with caustic (basic) materials in an acid-base chemical neutralization reaction which may be hazardous because of heat release.

Avoid: Strong alkalis, amines and strong oxidizing compounds.

**Hazardous decomposition products in a fire:** The essential breakdown products are volatile, toxic, malodorous, irritant and inflammable compounds such as dimethyl sulphide, methyl mercaptan, sulphur dioxide, carbon monoxide, carbon dioxide and phosphorous pentoxide.

## SECTION 11 — TOXICOLOGICAL INFORMATION

**Routes of exposure:** Skin contact, skin absorption, eye contact.

**Acute toxicity:** The product is not considered harmful. However, it may become harmful after prolonged storage or storage at too high temperatures.

**Toxicological data:**

LC<sub>50</sub>, inhalation (mg/L/4 hrs) = >5.1 (4-hrs)

LD<sub>50</sub>, oral, (mg/kg) = >2000

LD<sub>50</sub>, dermal, (mg/kg) = >2000

Irritating to eyes

Irritating to skin

Skin sensitizer = May cause weak sensitization by skin contact

**Carcinogenicity:**

**Malathion:**     IARC Group 3: The agent (mixture, or exposure circumstance) is unclassifiable as to carcinogenicity to humans.

**Teratogenicity, mutagenicity, other reproductive effects:** No known teratogenic, mutagenic or reproductive effects.

## SECTION 12 — ECOLOGICAL INFORMATION

**Environmental hazards:** This product is toxic to aquatic organisms, including fish and invertebrates. This product may contaminate water through drift of spray in wind. This product has a high potential for runoff after application. Use care when applying to an area which is adjacent to any body of water, and do not apply when weather conditions favor drift from target area. Poorly drained soils and soils with shallow water tables are more prone to product runoff that contains this product. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate.

**Ecotoxicological information:** The product is toxic to aquatic organisms. The ecotoxicity measured on the active ingredient is:

**Malathion:**

- Fish – 96-hr LC<sub>50</sub>, Rainbow trout (*Oncorhynchus mykiss*) = 0.18 mg/l  
37-day NOEC, Rainbow trout (*Oncorhynchus mykiss*) = 21 µg/l  
Invertebrates – 48-Hr EC<sub>50</sub>, Daphnids (*Daphnia magna*) = 0.72 µg/l  
21-day NOEC, Daphnids (*Daphnia magna*) = 0.06 µg/l  
Algae – 72-hr IC<sub>50</sub>, Green Algae (*Selenastrum capricornutum*) = 4.06 mg/l  
Birds – LD<sub>50</sub>, Bobwhite quail (*Colinus virginianus*) = 359 mg/kg  
5-day dietary LC<sub>50</sub>, Bobwhite quail (*Colinus virginianus*) = 3,497 mg/kg  
LD<sub>50</sub>, Mallard duck (*Anas platyrhynchos*) = 1,485 mg/kg  
Earthworms – 14-day LC<sub>50</sub>, *Eisenia foetida foetida* = 613 mg/kg soil  
Bees – LD<sub>50</sub>, acute oral = 0.38 µg/bee  
LD<sub>50</sub>, topical = 0.27 µg/bee

**Mobility:** Under normal conditions **malathion** is of medium mobility in soil but is degraded rapidly.

**Persistence and degradability:** **Malathion** is biodegradable but does not fulfil the criteria for being readily biodegradable. It undergoes rapid degradation in the environment and in waste water treatment plants. No adverse effects are found at concentrations up to 100 mg/l in waste water treatment plants. Degradation occurs both aerobically and anaerobically, mostly biologically. Degradation half-lives vary with circumstances, but are usually one to a few days in aerobic soil and water.

**Bioaccumulative potential:** **Malathion** is not expected to bioaccumulate. It is rapidly metabolised and excreted (with half-life approximately 3 days). The measured bioconcentration factor (BCF) of **malathion** is 95 (average for several fish species).

## SECTION 13 — DISPOSAL CONSIDERATIONS

**Handling for disposal:** To avoid wastes, use all material by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program.

**Methods of disposal:** Do not contaminate water, food, or feed by storage or disposal. Refer to product label for specific container disposal instructions.

## SECTION 14 — TRANSPORTATION INFORMATION

**US DOT 49 CFR information:**

For **non-bulk** shipments (<19.5 gals):

This material is not regulated for transport.

For **non-bulk** shipments (≤19.5 gals, <119 gals):

UN3082, Environmentally hazardous substance, liquid, n.o.s. (malathion), 9, PGIII, RQ

For **bulk** shipments (≥119 gals) by all modes of transportation:

UN3082, Environmentally hazardous substance, liquid, n.o.s. (malathion), 9, PGIII, RQ, Marine Pollutant

**INTERNATIONAL:**

**IMDG/IMO (vessel):** UN3082, Environmentally hazardous substance, liquid, n.o.s. (malathion), 9, PGIII, RQ, Marine Pollutant

**IATA/ICAO (air):** UN3082, Environmentally hazardous substance, liquid, n.o.s. (malathion), 9, PGIII, RQ, Marine Pollutant

## SECTION 15 — REGULATORY INFORMATION

**FIFRA:** 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 on non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**WARNING**

Causes substantial but temporary eye injury.

Harmful if swallowed.

Harmful if absorbed through skin.

Do not get in eyes or on clothing.

Avoid contact with skin, eyes or clothing.

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

This product is toxic to aquatic organisms, including fish and invertebrates.

**EPA/CERCLA Reportable Quantity (RQ):** Malathion - RQ 100 lbs. (19.5 gallons product)

**SARA TITLE III:**

*Sec. 302, Extremely Hazardous Substance Notification:* This material is not known to contain any Extremely Hazardous Substances.

*Sec. 311/312, Hazard Categories:* Immediate (acute) health hazard

Chronic (delayed) health hazard

*Sec. 313, Toxic Chemicals Notification:* Malathion (CAS #: 121-75-5) 57%

**California Proposition 65:** Not applicable

## SECTION 16 — OTHER INFORMATION

**HMIS Rating:** 1 Health; 0 Flammability; 0 Reactivity

**NFPA Rating:** 1 Health; 0 Flammability; 0 Reactivity

0-minimal 1- slight 2-moderate 3-severe 4-extreme

**Prepared by:** FMC Corporation

**SDS preparation date:** April 29, 2013