

MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product Identifier : **FYFANON ULV MOSQUITO**

Product Code(s) : None reported.

Product Use : Active ingredient in insecticides.

Chemical Family : Mixture

Supplier's name and address:
Cheminova, Inc.
 One Park Drive, Suite 150
 PO Box 110566
 Research Triangle Park, NC, USA
 27709

Manufacturer's name and address:
Cheminova A/S
 PO Box 9
 DK-7620
 Lemvig, , Denmark

Information Telephone # : 919-474-6600 (8:00 AM - 5:00 PM, EST, Monday-Friday)

24 Hr. Emergency Tel # : Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).
 For Medical Emergencies: (800) 303-6950

SECTION 2 - HAZARDS IDENTIFICATION

Classification : OSHA: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200). Hazardous classification: Unstable (reactive); Acute Health Hazard; Chronic Health Hazard.

WHMIS information: This product is a Pest Control Product and is not regulated as a Controlled Product under the Hazardous Products Act (HPA). For informational purposes, this product would have the following WHMIS classification: Class D2B (Materials Causing Other Toxic Effects, Toxic Material); Class F (Dangerously Reactive Material).

Emergency Overview : Colourless to light yellow liquid. Slightly aromatic odour.
 Warning! Dangerous exothermic decomposition may occur at temperatures greater than 212°F / 100°C. May be harmful if inhaled or swallowed. May cause eye irritation. Contains material which can cause nervous system damage. May be dangerous for the environment. Malathion is toxic to birds, fish, aquatic invertebrates, aquatic life stages of amphibians and highly toxic to bees.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

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

Skin : Direct skin contact may result in little or no irritation. Malathion and isomalathion can be rapidly absorbed through all skin surfaces. Causes symptoms similar to those listed for inhalation.

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

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

Effects of long-term (chronic) exposure

: Prolonged or repeated overexposure may cause behavioral changes.

Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : Cholinesterase inhibitor. See TOXICOLOGICAL INFORMATION, Section 11.

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

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

- Environmental precautions** : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply. Do not flush into surface water or sanitary sewer system. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.
- Spill response/cleanup** : 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. 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.
Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body. The used containers should be properly closed and labelled. Notify the appropriate authorities as required.
- Prohibited materials** : None known.
- Special spill response procedures** : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).
US CERCLA Reportable quantity (RQ): Malathion (100 lbs / 45.4 kg)

SECTION 7 - HANDLING AND STORAGE

- Safe Handling procedures** : This material is a toxic liquid. Wear chemically resistant protective equipment during handling. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Do not use near welding operations, flames or hot surfaces. Malathion should never be heated above 131oF / 55oC and also local heating above this temperature should be avoided. Keep away from acids and other incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling. Use caution when opening cap.
- Storage requirements** : Store in a cool, dry, well ventilated area. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area. Inspect periodically for damage or leaks. Product should be stored at temperatures not exceeding 68 to 77oF (20 to 25oC). Protect against physical damage.
- Incompatible materials** : Strong alkalis, amines and strong oxidizing compounds. The product can corrode iron, steel, tin plate and copper. Fyfanon is rapidly hydrolysed at pH > 7.0.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

<u>Exposure Limits</u>				
<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Malathion	1 mg/m ³ (inhalable)	N/Av	15 mg/m ³ (total dust)	N/Av

- Ventilation and engineering measures** : Provide sufficient ventilation to keep vapour concentration below the given TLV and/or PEL.
- Respiratory protection** : Respiratory protection is required if the concentrations exceed the TLV. Wear a pesticide respirator jointly approved by the MSHA and NIOSH. Seek advice from respiratory protection specialists.
- Skin protection** : Wear impervious gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton. Advice should be sought from glove suppliers.
- Eye / face protection** : Safety glasses with side-shields or chemical splash goggles.
- Other protective equipment** : Wear appropriate protective clothing to prevent skin contact, such as coveralls or long sleeved shirt, long pants, and shoes and socks. Other protective equipment, such as an eyewash station and safety shower, may be required depending on exposure and on workplace standards.

Toxicological data	: Fyfanon: LC50 Inhalation (rat): > 5.2 mg/L / 4 Hrs LD50 Oral (rat): 5500 mg/kg LD50 Dermal (rat): > 2000 mg/kg
Carcinogenic status	: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
Reproductive effects	: Not expected to have other reproductive effects.
Teratogenicity	: Not expected to be a teratogen.
Mutagenicity	: Not expected to be mutagenic in humans.
Epidemiology	: Not available.
Sensitization to material	: None known.
Synergistic materials	: Not available.
Irritancy	: May cause eye and skin irritation. May cause irritation to upper respiratory system.
other important hazards	: Cholinesterase inhibitor May cause central nervous system depression. Contains a material which can cause peripheral nervous system damage.
Conditions aggravated by overexposure	: None known.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity	: This product is an insecticide. Malathion is toxic to birds, fish, aquatic invertebrates, aquatic life stages of amphibians and highly toxic to bees. The toxicity of the active ingredients to wildlife species is measured to be: Fish - 96-hr LC50, Rainbow Trout (<i>Salmo gairdneri</i>) = 0.18 mg/L; 37-day NOEC: 21 µg/L Invertebrates - 48-hr EC50, Daphnids (<i>Daphnia magna</i>) = 0.72 mg/L; 21-day NOEC: 0.06 µg/L Algae - Green algae (<i>Selenastrum capricornutum</i>) 72-Hr LC50= 4.06 mg/L Birds - LD50, Bobwhite quail (<i>Colinus virginianus</i>) = 359 mg/kg; 5-day dietary LC50: 3497 mg/kg LD50, Mallard duck (<i>Anas platyrhynchos</i>) = 1485 mg/kg Earthworms - 14-day LC50, (<i>Eisenia foetida foetida</i>) = 613 mg/kg soil Bees - LD50, worker honey-bees, acute oral = 0.38 µg/bee. LD50, worker honey-bees, topical = 0.27 µg/bee
Mobility	: Under normal conditions, the active ingredient is of medium mobility in soil, but it is degraded rapidly.
Persistence	: The active ingredient, Malathion, is readily biodegradable. It undergoes rapid degradation in the environment and, without problems, in sewage treatment plants. No adverse effects are observed at concentrations up to 100 mg/L in waste water treatment plants. Degradation occurs both aerobically and anaerobically, and biologically as well as abiotically. Under normal conditions, Malathion is of medium mobility in soil, but is degraded rapidly. The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment.
Bioaccumulation potential	: The bioconcentration factor (BCF) of Malathion is 95 (average for several fish species).
Other Adverse Environmental effects	: This product is an insecticide. Malathion is toxic to birds, fish, aquatic invertebrates, aquatic life stages of amphibians and highly toxic to bees. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for Disposal	: Handle waste according to recommendations in Section 7.
Methods of Disposal	: Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Triple rinse (or equivalent) containers, then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill. Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
RCRA	: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method.