

## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>COMPANY ADDRESS:</b>	<b>EMERGENCY TELEPHONE NUMBERS:</b>
MICRO FLO COMPANY	(800) 424-9300 (CHEMTREC, transportation and spills)
P.O. BOX 772099	(800) 900-4044 (Poison Control Center, human health)
MEMPHIS, TN 38117	(800) 345-4735 (ASPCA, animal health)

<b>PRODUCT NAME</b>	: MALATHION 5EC
<b>CHEMICAL NAME</b>	: O-dimethyl phosphorodithioate of diethyl mercaptosuccinate
<b>CHEMICAL FAMILY</b>	: Organophosphate
<b>PRODUCT CODE</b>	: EPA Reg. No. 51036-104

### SECTION 2 - COMPOSITION, INFORMATION OF INGREDIENTS

COMPONENT	PERCENTAGE	CAS NUMBER	OSHA PEL	ACIGH TLV
Malathion	56.0	121-75-5	15 mg/m <sup>3</sup> (skin)	15 mg/m <sup>3</sup> (skin)
Aromatic hydrocarbon	35.0	64742-94-5	100 ppm	unknown

### SECTION 3 - HAZARDS IDENTIFICATION SUMMARY

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

**EMERGENCY OVERVIEW:** Amber liquid with aromatic odor.

- Cholinesterase inhibitor, harmful if swallowed, inhaled or absorbed through skin.
- Causes slight eye irritation.
- Avoid breathing vapor or spray mist.
- Avoid contact with eyes, skin or clothing.
- Keep out of reach of children.

Symptoms of over exposure are headaches, dizziness, nausea, vomiting, cramps, blurred vision, pinpoint pupils, tightness in chest, labored breathing, nervousness, sweating, watering of eyes, drooling, muscle spasms and coma.

**POTENTIAL HEALTH HAZARDS:**

**EYE** - Mildly irritating to the eyes. Degree of injury will depend on the amount of material that gets into eye and the speed and thoroughness of the first aid treatment.

**SKIN** - May be absorbed through the skin in harmful amounts.

**INHALATION** - Vapor or spray mists may be harmful if inhaled.

**INGESTATION** - May be harmful if swallowed.

**POTENTIAL PHYSICAL HAZARDS:** Can decompose at high temperatures forming toxic gases. Impact or high temperatures can cause decomposition.

**ENVIRONMENTAL HAZARDS:** Toxic to wildlife and domestic animals.

### SECTION 4 - FIRST AID MEASURES

**IF SWALLOWED:** Call physician or Poison Control Center immediately. Drink promptly a large quantity of milk, egg whites, or gelatin solution, or, if these are not available, large quantities of water. Avoid alcohol. Do not induce vomiting.

**IF IN EYES:** Flush eyes with plenty of water. Call a physician if irritation persists.

**IF INHALED:** Remove victim to fresh air. Apply artificial respiration if indicated. Get medical attention.

**IF ON SKIN:** Remove contaminated clothing and wash affected areas of skin with soap and water. Get medical attention.

**NOTE TO PHYSICIAN:** This product causes cholinesterase inhibition. Atropine is antidotal. 2-PAM may be effective as an adjunct to atropine.

#### SECTION 5 - FIRE FIGHTING MEASURES

**FLASHPOINT (method):** 150 F (TCC)

**FLAMMABLE LIMITS (LFL-UFL):** Unknown

**FIRE AND EXPLOSION HAZARD:** Combustible Liquid. Can form explosive mixtures at temperatures at or above the flashpoint. Can burn in fire, releasing irritating and toxic gases due to thermal decomposition or combustion.

**EXTINGUISHING MEDIA:** Use foam, dry chemical, carbon dioxide, or water spray when fighting fires involving this material.

**FIRE FIGHTING INSTRUCTIONS:** Evacuate area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Fire exposed containers can build up pressure and should be kept cool with water spray if possible. Explosive vapor could form from ruptured containers. Dike and collect water used to fight fire to prevent environmental damage due to run off. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water run off.

**FIRE FIGHTING EQUIPMENT:** Self-contained breathing apparatus with full facepiece. Full fire fighting turn-out gear (Bunker gear).

**HAZARDOUS COMBUSTION PRODUCTS:** Dimethyl sulfide, Oxides of hydrogen, carbon, sulfur, phosphorous.

#### SECTION 6 - ACCIDENTAL RELEASE MEASURES

Clean up spills immediately, observing precautions in Section 8 of this document. Isolate hazard area. Keep unnecessary personnel from entering.

**SMALL SPILL:** Absorb small spills on sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal. Rinse area with dilute soda ash and place rinsate in chemical waste container.

**LARGE SPILL:** Dike large spills using absorbent or impervious material such as clay, sand or fuller's earth. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify, and scrape up for disposal. After removal, scrub the area with detergent and water and neutralize with dilute alkaline solutions of soda ash, or lime. Pick up wash liquid with additional absorbent and place in a chemical waste container for proper disposal. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage systems and bodies of water.

#### SECTION 7 - HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN!

**HANDLING:** Use only in a well-ventilated area. Loosen closure cautiously before opening as contents may develop pressure upon prolonged storage. Do not reuse this container.

**STORAGE:** Keep container closed when not in use. Keep away from food, feed and drinking water. Store in a well ventilated, dry place away from heat and other sources of ignition.

#### SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

**EXPOSURE LIMITS (8 HOUR TWA):** (Refer to Section 3)

**ENGINEERING CONTROLS:** Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**PERSONAL PROTECTIVE EQUIPMENT:**

EYE PROTECTION - Safety glasses.

CLOTHING - Long-sleeved shirt and long pants. Shoes plus socks. Chemical-resistant headgear for overhead exposure.

GLOVES - Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, or viton.

RESPIRATOR - When handling in enclosed areas where exposure limits may be exceeded, use a respirator with either an organic vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS:**

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
3. 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.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL DESCRIPTION:** Pale amber liquid.

**ODOR:** Aromatic with slight sulfurous mercaptan odor.

**MOLECULAR WEIGHT (technical):** 330.4

**MOLECULAR FORMULA (technical):** C<sub>10</sub>H<sub>19</sub>O<sub>6</sub>PS<sub>2</sub>

**BOILING POINT:** 300 F (technical).

**MELTING POINT:** 35 F (technical).

**SPECIFIC GRAVITY:** 1.07

**pH:** 6.0 - 6.5 (5% w/w in water).

**VAPOR PRESSURE:** 3.4 x 10<sup>-6</sup> mm Hg @ 25C (technical).

**% VOLATILE:** 40%

**WATER SOLUBILITY:** Emulsifiable.

**SECTION 10 - STABILITY AND REACTIVITY**

**CHEMICAL STABILITY:** Stable, however may decompose if heated.

**CONDITIONS TO AVOID:** Avoid temperatures above 105°F(40°C) and below 25°F(-7°C).

**INCOMPATIBILITY WITH OTHER MATERIALS:** Alkaline and acidic conditions and materials. Oxidizing materials. Mildly corrosive to steel, iron and copper.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Dimethyl sulfide and oxides of hydrogen, sulfur, carbon and phosphorous due to thermal decomposition.

**HAZARDOUS POLYMERIZATION:** Product will not undergo polymerization.

**SECTION 11 - TOXICOLOGICAL INFORMATION**

**ACUTE TOXICITY:**

Oral LD <sub>50</sub> (rat)	-	> 5,000 mg/Kg
Dermal LD <sub>50</sub> (rat)	-	> 2,000 mg/Kg
Inhalation LC <sub>50</sub> (rat)	-	> 4.3 mg/L
Eye Irritation (rabbit)	-	Moderate
Skin Irritation (rabbit)	-	Mild
Sensitization (guinea pig)	-	Non-sensitizer

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Pre-existing cholinesterase depression and respiratory conditions.

**CARCINOGEN STATUS:**

OSHA	-	Not listed.
NTP	-	Not listed.
IARC	-	Not listed.

**MUTAGENIC DATA:** Slight evidence at high doses during *in vitro* studies.

**ADDITIONAL DATA:** Not known to exhibit reproductive or teratogenic (birth defect) effects. Repeated or prolonged low level exposures to organophosphates may cause sensitization to subsequent exposures that mimic acute exposures.

#### SECTION 12 - ECOLOGICAL INFORMATION

**ENVIRONMENTAL SUMMARY:** This product is toxic to fish, aquatic invertebrates, and aquatic life stages to amphibians. Do not apply directly to water, or to areas where surface water is present. Do not contaminate water when disposing of equipment washwaters. This product is highly toxic to bees exposed to direct treatment.

**FISH TOXICITY:** (Technical)

96 hour LC<sub>50</sub>, Rainbow trout - 200 ug/L

96 hour LC<sub>50</sub>, Bluegill - 100 ug/L

**AVIAN TOXICITY:** (Technical)

Oral LD<sub>50</sub>, Bobwhite quail - 400 mg/Kg

Oral LD<sub>50</sub>, Mallard duck - 1,400 mg/Kg

**BEE TOXICITY:** Highly toxic, contact LD<sub>50</sub> - 0.3 ug/bee

#### SECTION 13 - DISPOSAL CONSIDERATIONS

**WASTE:** Pesticide wastes are toxic. Dispose of in accordance with applicable Federal, state and local laws and regulations.

**CONTAINER:** Refer to product label.

#### SECTION 14 - TRANSPORT INFORMATION

**DOT SHIPPING DESCRIPTION:** Environmentally Hazardous Substances (Malathion), 9, UN 3082, PG III< ERG # 171

<b>DOT HAZARD CLASS:</b>	9
<b>UN NUMBER:</b>	UN 3082
<b>DOT PACKING GROUP:</b>	III
<b>DOT PRIMARY/SECONDARY LABEL:</b>	Class 9
<b>DOT PRIMARY/SECONDARY PLACARD:</b>	Class 9
<b>DOT EMERGENCY RESPONSE GUIDE #:</b>	171

#### SECTION 15 - REGULATORY INFORMATION

**FIFRA:** All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide.

**OSHA HAZARD COMMUNICATION STANDARD STATUS:** Regulated

**CERCLA REPORTABLE QUANTITY:** 100 #'s

**SARA TITLE III STATUS:**

302 Extremely Hazardous Substance	-	No
311/312 Hazard Categories	-	Immediate, Fire
313 Toxic Chemicals	-	Malathion

**CALIFORNIA PROP 65 STATUS:** Not Listed

#### SECTION 16 - OTHER INFORMATION

**DISCLAIMER:** The information presented herein is based on available data from reliable sources and is correct to the best of Micro Flo's knowledge. Micro Flo makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.

**REVISED DATE:** July 14, 1999

**REVISED FOR:** Addition of Poison Control Emergency Numbers

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