



## MATERIAL SAFETY DATA SHEET

### **MALLET<sup>®</sup> 960ULV**

ASTRA INDUSTRIAL COMPLEX CO., LTD. (ASTRACHEM)  
P.O. Box 30447, AL-KHOBAR 31952  
KINGDOM OF SAUDI ARABIA

#### 1. PRODUCT IDENTIFICATION

**Product Name:** MALLET<sup>®</sup> 960ULV

**Chemical Class:** Organophosphorus

**Use:** Mallet 960ULV is used as a non-systemic insecticide and acaricide with contact, stomach and respiratory action. It is used to control a wide range of pests including: aphids, mites, grass-hoppers, flies, scale; thrips, leaf miners, loopers, pear psylla, mealybugs, bollworms, lice, ticks, ants, spiders and many others. It is used in pome, soft and stone fruits, cotton, vegetables, potatoes and rice.

**Producer:** Astra Industrial Complex Co., Ltd.  
P.O. Box 30447, Al-Khobar 31952  
Kingdom of Saudi Arabia  
Emergency Tel # (+966) 3 8121 406

#### 2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance	Proportions (% w/w)	Chemical structure
<b>Malathion Technical</b> <b>CAS No.</b> 121-75-5 <b>Chemical Name:</b> diethyl (dimethoxythiophosphorylthio)succinate; S-1,2-bis(ethoxycarbonyl)ethyl O,O- dimethyl phosphorodithioate (IUPAC)	87.00 (960 ± 20 g/L)	$\begin{array}{c} \text{S} \\    \\ (\text{CH}_3\text{O})_2\text{P} \text{---} \text{CH} \text{---} \text{CH}_2 \text{---} \text{CO}_2 \text{---} \text{CH}_2 \text{---} \text{CH}_3 \\   \\ \text{CO}_2 \text{---} \text{CH}_2 \text{---} \text{CH}_3 \end{array}$
<b>Organic solvents</b>	13.00	



### 3. HAZARD IDENTIFICATION

#### Acute Effects

##### Swallowed:

The concentrate is slightly toxic and considered harmful if swallowed.

##### Eye:

Moderately irritating to the eyes, permanent eye injury is not expected.

##### Skin:

Slightly irritating to the skin

##### Inhalation:

Slightly toxic, Inhalation of excessive amount of spray may cause cholinesterase inhibition.

##### Chronic effects:

Prolonged or repeated exposure may show adverse effects on the liver and kidneys.

#### Other Health Hazard Information

Cholinesterase Inhibitor

### 4. FIRST AID MEASURES

#### First Aid:

##### Swallowed:

If poisoning occurs, contact a doctor. Do not give fluids or induce vomiting if person is unconscious or having convulsions. If swallowed, give one atropine tablet (0.6 mg) every 5 minutes until dryness of the mouth occurs. Get affected person to a doctor or hospital promptly.

##### Eye:

Irrigate for 15 minutes with copious quantities of water with eyelids held open. Seek medical advice.

##### Skin:

Remove contaminated clothing at once, wash skin thoroughly with soap and water. Obtain medical attention immediately.

##### Inhalation:

Remove to fresh air. Get to a doctor or hospital promptly.

#### First Aid Facilities:

Obtain an emergency supply of Atropine tablets (0.6 mg).



**Advice to doctor:**

A cholinesterase inhibitor. Atropine treatment may be required or treat with up to 10 mg of IV diazepam – curare therapy is contraindicated. Treat hydrocarbon pneumonitis secondary to pulmonary oedema. Do not give adrenergic amines, aminophylline, succinylcholine, phenothiazines or reserpine alkaloids or oils.

**5. FIRE FIGHTING MEASURES**

Toxic gases containing oxides of sulphur and phosphorous may be evolved if involved in fires or exposed to extreme heat. Breathable air apparatus may be required in confined area. Stay upwind.

**Extinguishing Media:**

Water fog, dry chemical, foam or carbon dioxide.

**Special fire fighting procedures:**

Fire fighters should use self contained breathing apparatus. Prevent runoff of fire water. Avoid exposure to smoke.

**6. ACCIDENTAL RELEASE MEASURES**

Contain spill and absorb with sand or proprietary absorbent (vermiculite). Prevent from entering drains, waterway or sewers. Collect in sealed open top containers for disposal.

**Disposal:**

Triple rinse containers, add rinsate to the spray tank, then offer container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations. On-site disposal of concentrate is not acceptable.

**7. HANDLING AND STORAGE**

Keep out of reach of children, do not store with food, feed or other material to be used or consumed by humans or animals. Do not contaminate water supplies, lakes, streams, or ponds. Store in a secure, dry, well-ventilated area, segregated from oxidizers and incompatible materials. Protect from moisture.



## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure Standards:

Exposure standard for Malathion (maldison): 10 mg/m<sup>3</sup> (TWA).

### Engineering Controls:

Natural ventilation only required when handling the concentrate. A local exhaust should be used in confined areas to keep the level of solvent within acceptable limits.

### Personnel Protection:

The concentrate is harmful; skin absorption is the most common route of exposure. May be irritated the eyes and skin. Repeated minor exposure may have cumulative effects. Avoid contact with the skin and eyes and avoid breathing the vapor. Do not inhale the spray mist. When opening the container of concentrate and preparing the spray, wear cotton overalls buttoned to the neck and wrist, washable hat and elbow-length PVC gloves. When using in an enclosed area wear face shield. If product spilled on skin wash affected area thoroughly with soap and water. After use and before eating drinking or smoking, wash hands, arms, face thoroughly with soap and water. After each day's use, wash gloves, face shield and contaminated clothing. Do not eat or smoke while spraying.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Assay:	"Malathion" 960 ± 20 g/L
Appearance:	Clear, colorless liquid free of visible impurities.
Odour:	Slightly aromatic
Acidity:	0.04%
Melting point:	<0 C
Density:	1.168 ± 0.01
Flash point:	>40 C
Water contents:	0.0882%
Solubility in H <sub>2</sub> O:	Soluble

### Other Properties:

Concentrate forms an emulsion with water.

## 10. STABILITY AND REACTIVITY

Stability	: Stable
Conditions to avoid	: Contact with iron and strong alkalis and storage above 50 C
Polymerization	: Will not occur
Condition to avoid	: None currently known



Incompatibility : Iron, strong alkalis and strong oxidizers  
Hazardous : Thermal decomposition may produce isomalathion  
Combustion : Hydrogen sulfide, sulfur, oxides of carbon and phosphorus.

#### 11. TOXICOLOGICAL INFORMATION

##### Technical Malathion:

Acute oral LD<sub>50</sub> for rates : 1,375 – 2,800 mg/Kg  
Mice : 775 – 3,321 mg/Kg  
Cattle : 500 mg/Kg

Acute dermal LD<sub>50</sub> for rabbits: 4,100 mg/Kg

Toxic to fish : Toxic to fish  
LC<sub>50</sub> for bluegill sunfish : 0.1mg/L

Toxicity to Bees : Toxic to bees  
Toxicity to birds : Not acutely toxic to birds

#### 12. ECOLOGICAL INFORMATION

Toxic to fish, Dangerous to bees

Do not spray and plants in flower while bees are foraging.

Do not contaminate dams, rivers or streams with pesticide or used container. Do not use container for any other purpose.

Triple rinse containers with water and add rinsate to the spray solution.

Puncture top, bottom and sides of empty container, then crush and bury in an approved landfill, or bury under at least 500 mm of soil in a non-crop, non-pasture area way from water sources or homes.

Malathion is rapidly biodegraded in soil and sewage treatment plants.

#### 13. DISPOSAL CONSIDERATION

Pesticide wastes are toxic. Do not reuse product containers. Dispose of product containers, waste containers and residues according to local health and environmental regulations.



14. TRANSPORT INFORMATION

**Proper Shipping Name:** Organophosphorus pesticide, liquid, toxic, flammable, flash point  $\geq 23^{\circ}\text{C}$  (Malathion)

**UN. No:** UN 3017

**Hazard Class:** 6.1

**Classification Code:** TF2

**Packing group:** III

**Subsidiary Risks:** 6.1 + 3

**Special provisions:** 61

**Limited quantities:** LQ19

**Packaging:** Packing instructions P001, IBC03, R001  
Special packing provisions -  
Mixed Packaging Provisions MP15  
Instructions T7

**UN Portable tanks** Special Provisions TP2 TP28  
Tank Code L4BH

**ADR Tank** Special Provision TU15 TE1 TE15 TE19  
Vehicle for tank carriage FL  
Transport Category 2

**Special provision carriage** Packages -  
Bulk -  
Loading, unloading & Handling CV13 CV28  
Operation S2 S9

**Hazard Identification** 63

15. REGULATORY INFORMATION

SARA, Title III section 313  
Malathion (CAS: 121-75-5)  
Section 311/312  
Acute Health Hazard  
Chronic Health Hazard

16. OTHER INFORMATION

Buyer assumes all responsibility for safety and use not in accordance with the product label instructions.