

A wettable powder contact insecticide for the control of pests and indicated.

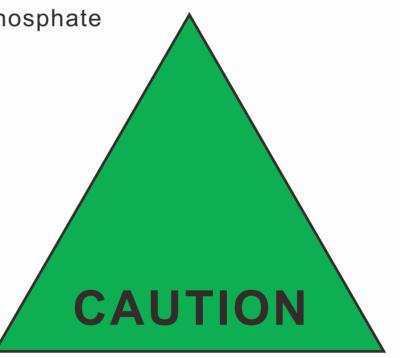
Reg. No.:



COMPOSITION	<u>mass/vol.</u>
Malathion	250g
Inert ingredients	to 1kg

Chemical group ......Organophosphate

1kg Net



HARMFUL IF SWALLOWED

# **KEEP OUT OF REACH OF CHILDREN**



- 1. Tripple rinse clean container after use
- 2. Puncture holes in bottom
- 3. Return to Maguires Recycling Facilitator / Return to nearest recycling facility

Registration held by:

MAGCHEM (PVT) LIMITED, 2274 TILBURY ROAD, WORKINGTON, HARARE, ZIMBABWE

#### **DIRECTIONS FOR USE:** Use only as directed

#### Compatibility:

Generally compatible with all insecticides and fungicides. When mixed with alkaline products (Lime sulphur, Bordeaux mixture), the initial kills are satisfactory but the residual toxicity may be

#### Mixing Instructions:

First mix the required quantity of the product with some water in a bucket or in the spray tank. Keep the agitator running whilst the balance of water is added to the premix in the tank. Use the spray mixture without delay and do not allow to stand for prolonged periods.

CROP/PEST	DOSAGE/100 ℓ water	REMARKS
APPLES Bryobia mite Woolly aphid	HV 250 g (6.25 – 8.75kg/ha)	Apply as a full cover spray.
BEANS Aphids Thrips	250g 350g	Apply as a full cover spray. Apply as a full cover spray. Repeat after 10-14 days.
CRUCIFERAE Aphids, caterpillars of diamond back moth and the greater cabbage moth	500g	Apply when infestation is noticed. Apply as a full cover spray, paying special attention to underside of leaves. Repeat when necessary.
CUCURBITS Aphids Ladybirds	250g 250g	Apply as a full cover spray when pest is noticed and repeat when necessary. Apply as a full cover spray. Do not apply when plant surface is wet. Ensure that the undersides of the leaves are also wetted. Bait treatment:
Pumpkin flies Thrips	300g + 8kg sugar 250g	Apply at 35 - 40ℓ/ha as a coarse droplet spray. For small plots, repeat appli-cation twice a week. For large plots, repeat application weekly and after rain. Apply at first sign of infestation.
GRANADILLAS Mealy bugs, soft scale, red, white and purple scale Pumpkin flies Thrips	500g 300g + 8kg sugar 350g	Apply as a full cover spray when pest becomes troublesome. Ant control will often result in the disappearance of the pest. Bait: Apply as a coarse spray twice a week. Apply when pest is troublesome.
GUAVAS Mealy bugs Scale	250g 500g	Apply when infestation is noticed.
ONIONS Thrips	350g	Apply at first sign of infestation. Repeat at 7-10 day intervals. Not to be used on spring onions.
PEPPERS Aphids Thrips	250g (1,25kg/ha) 350g (1,75 kg/ha)	Apply as a full cover spray. Will also control Astylus beetle. Apply as a full cover spray. Will also control Astylus beetle and Aphids.
TOMATOES Aphids Thrips	250g 350g	Apply as a full cover spray. Apply as a full cover spray when necessary.

#### SYMPTOMS OF POISONING

Symptoms of exposure to the product include: nausea, headache, tiredness, glddiness, blurred vision and papillary constriction. Depending on severity of poisoning these symptoms become worse with the onset of vomiting, abdominal pain, diarrhea, sweating and salivation. Confusion, ataxia, slurred speech, loss of reflexes are some of the central nervous system effects that may lead to misdiagnosis of acute alcoholism.

Inhalation: Remove source of contamination or move victim to fresh air. Keep affected person warm and at rest. Supply oxygen if necessary. Treat symptomatically and supportively. Seek medical advice immediately.

Skin contact: Remove contaminated clothing, shoes and leather goods.

Gently wipe of excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Seek medical advice if necessary. Persons who become sensitized may require specialized medical management with anti-inflammatory agents.

Eye contact: Immediately flush eyes with gently flowing cold water or saline solution for 20 minutes, holding the eyelid(s) open.

Seek medical attention immediately

Ingestion: Have victim rinse mouth thoroughly with water. Do not induce vomiting, due to the aromatic solvent. Seek medical advice immediately,

Atropine must be administrated as early as possible and could save lives, if given in time and in an adequate dosage. Patients with organophosphate poisoning require amounts of atropine far in excess of doses usually employed in medical practice.

In less severe cases, begin with 2mg atropine intravenously for adults or 0.05mg atropine/kg body weight intravenously for children under 12 years of age and repeat administration of the drug at 15 – 30 min intervals

In severe cases a total atropine dose of 20 - 80mg in the first hour may be necessary, with repeated drug administrations at 3 – 10 min intervals. When signs of atropinization appear the dose and frequency of administration should be reduced to a schedule that will maintain full atropinization for at least 24h.

N.B. Because of their respiratory-depressant effects, morphine and similar drugs are contraindicated for patients poisoned with organophosporous compounds. Avoid aminoglycosides and succinvlcholine, which have a blocking effect on the neuromuscular junction.

Phenothiazines, reserpine and theophylline are contraindicated in organophos-phorous poisoning

# **ANTIDOTE**

Atropine must be administrated as early as possible and could save lives, if given in time and in an adequate dosage

# **WARNINGS**

Minimum time between last application and harvest or feeding:		
Tomatoes	.1 da	łу
Peppers	3 da	iys
Cucurbits, beans, cruciferae, granadillas,		-
Onions (tops), other edible crops mentioned	.7 da	ays
Apples guavas	I0 da	ivs

Handle with care. Avoid contact/splashing. Wear protective clothing, suitable mask, goggles, rubber gloves and boots. Wash contaminated clothing daily. Wash with soap and water immediately after accidental skin contact. KEEP OUT OF REACH OF CHILDREN. KEEP APART FROM FOOD AND FOODSTUFFS. KEEP UNDER LOCK AND KEY. Prevent drift onto other crops, grazing, rivers, dams or areas not under treatment. Clean applicator after use and dispose of wash water where it will not contaminate food, grazing, rivers or dams. Destroy empty container and never use for any other purpose. Toxic to fish, bees and wildlife.

# **SAFETY PRECAUTIONS**

# **Empty container disposal**

invert the empty container over the spray tank or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of 10% of the container. Add the rinsings to the contents of the spray tank. Destroy the empty container by perforation and flattening. Return to supplier for recycling. DO NOT use for any other purpose. Dispose of the wash water at a site for the disposal of pesticides.

Clean applicator thoroughly after use and ensure that all traces of MALATHION 250 WP are removed. Make use of the following method;

(a) Drain and rinse tank, spray boom and hoses with clean water for at least 10 minutes

(b) Fill tank with clean water and add it to 1 litre household bleach (5%) or 1.5 Litres of household bleach (3.5%) per 200 Litres of water. Rinse hoses and spray boom and leave in tank for 15 minutes whilst agitating. Drain through nozzle outlets.

(c) Repeat step (b) and thereafter, rinse thoroughly with clean water and dispose of the wash water at a site designated for the disposal of pesticides.

# TO CAUSE A HAZARD IN THE USE, STORAGE OR DISPOSAL OF THIS SUBSTANCE IS AN OFFENCE

NOTE: The excellent results which this chemical normally yields are not however warranted or guaranteed as effectiveness can be greatly influenced by factors outside the control of either the manufacturers or the suppliers. No warranty whatsoever, express or implied, is therefore given concerning the performance or effectiveness of this chemical and responsibility is specifically excluded for any damage, injury or loss of any kind during or resulting from its handling, use or storage, whether or not such has been in accordance with directions.

WARRANTY: This product is warranted to consist of the ingredients shown on the label.

Date of Manufacture: 22 Sep. 2012 Batch No.: 20120922

Manufactured by:

NOVA AGRO (HK) LTD 6TH FLOOR, WYNDHAM PLACE. 44 WYNDHAM STREET. **CENTRAL HONG KONG** 

Registration held by:

MAGCHEM (PVT) LIMITED, 2274 TILBURY ROAD, WORKINGTON, HARARE. **ZIMBABWE** 



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**SUPPLIER** : NOVA AGRO (HK) LTD

> (Reg. No. 1023146) 6th Floor Wyndham Place 44 Wyndham Street CENTRAL HONG KONG

**EMERGENCY NUMBERS** 

**POISONINGS:** 

National Poison Centre : (27)-21-9386084 (office hours). (South Africa) (27)-21-9316129 (after hours).

1. PRODUCT AND INFORMATION

**Trade Name:** MALATHION 500EC INSECTICIDE

UN No. 1993

2. COMPOSITION / INFORMATION ON **INGREDIENTS** 

Hazardous components: Malathion 500 g/L, Xylene

Active ingredient: Malathion (BSI, E-ISO, ESA, F-ISO,

JMAF)

**Chemical Name:** diethyl (dimethoxythiophosphorylthio) succinate; S-1,2-bis(ethoxycarbonyl)ethyl O,Odimethyl

phosphorodithioate (IUPAC)

CAS No. 121-75-5

Chemical Family: Organophosphate

**Chemical Formula:** C<sub>10</sub>H<sub>19</sub>O<sub>6</sub>PS<sub>2</sub> (Mol. wt.: 330.3)

**EEC classification:** F, Flammable

**R Phase:** R10, R 22

3. HAZARD IDENTIFICATION

Toxicity class: WHO III; EPA III

**ADI** 0.02 mg/kg

**NOEL** 100 mg/kg (rats) - 21 months

Main Hazard: This compound inhibits cholinesterase

enzyme activity in the nervous tissue.

Fire and explosion hazard:

Product is flammable due to the solvent.

**Chemical Hazard:** 

None known.

**Biological Hazard:** 

Likely routes of exposure: Skin and eye contact, ingestion

and inhalation.

**Ingestion:** 

Harmful by ingestion. See point 4 symptoms.

**Inhalation:** 

Harmful by inhalation. See point 4 for symptoms.

**Skin contact:** 

May be irritating to skin.

Eye contact: May be irritating to eyes Carcinogenicity: Not carcinogenic. Mutagenicity: Not mutagenic. **Neurotoxicity:** Not a neurotoxin.

Reproductive / Teragenicity: Not teratogenic.

### 4. FIRST AID MEASURES

Effects of mercaptothion poisoning are similar to those observed with other organophosphates, except that larger doses are required to produce them.

Symptoms of exposure to the product include: nausea, headache, tiredness, giddiness, blurred vision and papillary constriction. Depending on severity of poisoning these symptoms become worse with the onset of vomiting, abdominal pain, diarrhea, sweating and salivation. Confusion, ataxia, slurred speech, loss of reflexes are some of the central nervous system effects that may lead to misdiagnosis of acute alcoholism.

#### **OVEREXPOSURE EFFECTS:**

After **inhalation of vapours** effects appear within minutes: ocular and respiratory effects generally appear first. These include marked meiosis, ocular pain, conjunctival congestion, diminished vision, ciliary spasm and brow ache. With acute systemic absorption, meiosis may not be evident due to systemic absorption, meiosis may not be evident due to sympathetic discharge in response to the hypertension. In addition to rhinorrhea and hyperemia of the upper respiratory tract, respiratory effects consist of "tightness" in the chest and wheezing respiration caused by the combination of bronchoconstriction and increased bronchial secretion.

Gastrointestinal symptoms occur earliest after ingestion and include anorexia, nausea and vomiting, abdominal cramps, and diarrhea.

With percutaneous absorption of liquid, localized sweating and muscular fasciculation in the immediate vicinity are generally the earliest manifestations.

#### **Inhalation:**

Remove source of contamination or move victim to fresh air.



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Keep affected person warm and at rest. Supply oxygen if necessary. Treat symptomatically and supportively.

#### Seek medical advice immediately.

#### Skin contact:

Remove contaminated clothing, shoes and leather goods.

Gently wipe of excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Seek medical advice if necessary. Persons who become sensitised may require specialised medical management with anti-inflammatory agents.

#### **Eye contact:**

Immediately flush eyes with gently flowing cold water or saline solution for 20 minutes, holding the eyelid(s) open.

#### Seek medical attention immediately.

#### **Ingestion:**

Have victim rinse mouth thoroughly with water. Do not induce vomiting, due to the aromatic solvent. **Seek medical advice immediately.** 

#### Advice to physician:

**Atropine** must be administrated as early as possible and could save lives, if given in time and in an adequate dosage. Patients with organophosphate poisoning require amounts of atropine far in excess of doses usually employed in medical practice.

### 5. FIRE- FIGHTING MEASURES

### **Extinguishing agents:**

Extinguish small fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

# Firefighting:

Remove spectators from surrounding area. Remove container from fire area if possible. Fight fire from maximum distance. For massive fire, use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Water can be used to cool unaffected containers but must be contained for later disposal. Avoid inhaling hazardous vapours. Keep upwind.

# **Special Hazards:**

Fire may produce irritating or poisonous mists (sulfur oxides, carbon oxides and phosphorus oxides) and other products of

combustion.

#### **Personal protective equipment:**

Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

# 6. ACCIDENTAL RELEASE MEASURES

# **Personal precautions:**

Do not inhale fumes. Ventilate area of spill or leak, especially confined areas. Avoid contact with skin, eyes or clothes. For personal protection see Section 8.

### **Environmental precautions:**

Do not allow entering drains or watercourses. When the product contaminates public waters, inform appropriate authorities immediately in accordance with local regulations.

#### **Occupational spill:**

For **small spills**, soak up sand or suitable non-combustible absorbent material, place into containers for subsequent disposal. Thoroughly wash body areas, which come into contact with the product. Avoid runoff to sewer as it may cause fire/explosion. Do not allow the product to come in contact with water systems. For **large spills** contact the manufacturer. Contain liquid far ahead of spill. Contain spillage and contaminated water for subsequent disposal. Do not flush spilled material into drains. Keep spectators away and upwind.

### 7. HANDLING AND STORAGE

#### Handling:

Remove sources of naked flame or sparks. Harmful by inhalation or if swallowed. Avoid contact with eyes and skin and inhalation of fumes. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily.

Remove clothing immediately if the insecticide gets inside.

Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

## Storage:

Store in its original container in isolated, dry, cool (avoid temperatures above  $40^{\circ}$ C) and well-ventilated area. Avoid cross contamination with other pesticides and fertilizers.



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Product hydrolyzed rapidly in aqueous alkaline solutions. Keep under lock and key out of reach of unauthorized persons, children and animals. Store away form incompatible substances. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

# 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### **Engineering control measures:**

It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. Only spark –resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

### PERSONAL PROTECTIVE EQUIPMENT:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal equipment including approved respiratory protection.

#### **Respirator:**

An approved full-face respirator suitable for protection from mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

### **Clothing:**

Employee must wear appropriate protective (impervious) clothing and equipment to prevent skin contact with the substance.

#### **Gloves:**

Employee must wear appropriate chemical resistant protective gloves to prevent contact with this substance.

### **Eye protection:**

Employee must wear splash-proof safety goggles and faceshield to prevent contact with this substance.

*Emergency eye wash*: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear to slightly yellow liquid with Mercaptan

odour.

Flammability: Flammable

**Explosive properties:** No information currently available.

Flash point: 39<sup>o</sup>C

Oxidising properties: No information currently available.

**pH:** No information currently available. **Relative density:** 1,030 g/ml at 20<sup>o</sup>C

**Storage stability:** Stable for up to 2 years under normal warehouse and field conditions. Product is decomposed by acids and alkalis.

**Solubility in water:** This product emulsifies in water.

# **Solubility in organic solvents:**

(All solubility figures for technical material at  $25^{\circ}C$ )

Miscible with most organic solvents (e.g. alcohols, ketones, ethers aromatic hydrocarbons). Slightly soluble in petroleum ether, and some types of mineral oil.

**Partition-coefficient in n-octanol / water:** Kow (logPow) = 2.75(data for active substance).

### 10. STABILITY AND REACTIVITY

#### **Stability:**

The product is stable at room temperature. Product is decomposed by acids and alkalis.

# **Incompatibility:**

The product is compatible with most other common pesticides but incompatible with alkaline materials such as Bordeaux mixture or Lime Sulphur.

Do not physically mix concentrate directly with other herbicides or pesticide concentrates; always dilute first.

#### **Hazardous decomposition:**

Product undergoes decomposition at high temperatures. Avoid heating above ambient temperature. Toxic fumes (hydrogen sulfide, carbon oxides and sulfur oxides) may be released when the product decomposes on heating.

# 11. TOXICOLOGICAL INFORMATION

BASED ON TECHNICAL MTL.

Acute oral LD<sub>50</sub>: 1375 - 2800 mg/kg body weight in rats.

**Acute dermal LD**<sub>50</sub>: 4100 mg/kg in rabbits. **Acute inhalation LC**<sub>50</sub> (4 h): 10mg/litre air (Cat)

**Acute skin irritation:** This product is classified as harmful

and a mild irritant.

Acute eye irritation: This product is classified as harmful

and mild irritant for the eyes.

**Dermal sensitisation:** No information currently available.



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Carcinogenicity: Studies did not detect carcinogenic activity. No human information available.

Teratogenicity / Reproductive hazard: Studies did not detect any tetragenic effects. No human information available.

Mutagenicity: Studies did not indicate that any mutagenic activity.

### 12. ECOLOGICAL INFORMATION

**Degradability:** (Technical material)

This product can be classified as non-persistent.

Biodegradation in soil is rapid with 80-95% biodegradation detected in 10 days. The rate of degradation increased with organic matter content, and half-lives in the 1-6 day range.

Biodegradation of 90% in 2 weeks was reported in raw river water.

Mobility: If released to soil, mercaptothion is expected to have very high mobility based upon an estimated Koc of 30.

Accumulation: Will not accumulate in soil.

**ECOTOXICOLOGY:** 

**Birds:** 

Non-toxic to birds. The reported acute oral LD<sub>50</sub> values are: in mallards, 1485 mg/kg; in pheasants, 167 mg/kg; in blackbirds and starlings, over 100 mg/kg; and in chickens, 525 mg/kg.

Fish:

Highly toxic to fish. Mercaptothion is highly toxic to aquatic invertebrates and to the aquatic stages of amphibians.

LC<sub>50</sub>: blue gill sunfish; 0,1mg/l

Daphnia:

Toxic to Daphnia magna

**Bees:** 

Toxic to bees.

### 13. DISPOSAL CONSIDERATIONS

#### Pesticide disposal:

Contaminated absorbents, surplus product, etc., should be burned in a high-temperature incinerator (>1000°C) with effluent gas scrubbing. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Comply with local legislation applying to waste disposal.

# Package product wastes:

Emptied containers retain vapour and product residues.

Observe all labeled safeguards until container is destroyed.

Combustible containers should be disposed of in pesticide incinerators. Non-combustible containers must be triple rinsed with water and then be punctured and transported to a scrap metal facility for recycling or disposal in approved

landfill site.

Comply with any local legislation applying to disposal.

### 14. TRANSPORT INFORMATION

**UN NUMBER** : 1993

ADR/IRD: Substance name: Flammable liquid, n.o.s.

(Mercaptothion 500 g/l). Substance ID NR: 1993

Hazard ID no. 33

Label : 3 Item no : 5o (c)

AIR/IATA:.

Shipping name: Flammable liquid, n.o.s. (Mercaptothion 500

g/l).

Class : 3 Subsidiary Risk : none Hazard Label : Flammable

Packaging group: III

Passenger aircraftt: Y309 (max 10 L)

Cargo aircraft : 309 (max 60 L) 310 (220 L)

**IMG/IMO:** 

Shipping name: Flammable liquid, n.o.s. (Mercaptothion 500

g/l).

Packaging group: III

Label of class : 3 Marine pollutant

Tremcard no : 30GF1-III

# 15. REGULATORY INFORMATION

Symbol: F

Indication of danger: Flammable

Risk phrases: R10 Flammable

R22 Harmful if swallowed.

**Safety phrases:** 

S2 Keep out of reach of children

S16 Keep away from sources of ignition

S24 Avoid contact with skin.



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### **National legislation:**

In accordance with the South African National Road Traffic Act, 1996(Act 93 of 1996), the Fire Brigade Act, 1987(Act 99 of 1987) and the Occupational Health and Safety Act, 1993 (Act. No. 85 of 1993).

### 16. OTHER INFORMATION

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons in receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations(s) containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.

### REFERENCES

- *The Pesticide Manual*; Thirteenth Edition; Editor Clive Tomlin; Crop Protection Publications, 2003.
- American Cyanamid co., Malathion 4% Dust Material safety data sheet (Italy), March 27, 1997
- Material safety data sheet (Spain) Malathion®1000E insecticide, March 27, 1997
- Dangerous Goods Regulations; IATA 2004; International Air Transport Association, 41st Edition, Effective 1 January 2004.
- EINECS PLUS
- International Chemical Safety Cards.
- EXTOXNET, PIP. Primary files maintained and archived at Oregon State University.
- HSDB (Toxicology Data Network).
- SABS 0265:1999

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