

# DIMETHOATE 400 EC

# SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product name:** DIMETHOATE 400 EC  
**Other identifier:** Dimethoate  
**Recommended use:** Insecticide  
**Restrictions on use:** Agriculture

**Supplier:** Universal Crop Protection (Pty) Ltd.  
**Co. Reg. No.:** 1983/008184/07  
 PO Box 801,  
 Kempton Park, 1620, South Africa  
**Telephone:** (011) 396 2233  
**Fax:** (011) 396 4666  
**Website:** [www.villacrop.co.za](http://www.villacrop.co.za)

**Emergency telephone numbers:**  
**24 Hr Transport / Spill emergency no:**  
 (Hazcall24) +27 86 044 4411  
 (Client: Villa Crop Protection)  
 Griffon Poison Information Centre +27 82 446 8946  
 (Client: Villa Crop Protection)  
**Poisoning Emergency telephone numbers:**  
 Griffon Poison Information Centre +27 82 446 8946  
 Poisons Information Centre +27 861 555 777

## 2. HAZARDS IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008		
Hazard classes	Hazard categories	H-statements
<b>Physical hazards</b>		
Flammable liquid	Flammable liquid 2	H225
<b>Health</b>		
Oral	Acute Toxicity 4	H302
Inhalation	Acute Toxicity 4	H332
Specific target organ toxicity	STOT SE 1	H370

**The most important adverse effects:**  
**Physiochemical effects:** Flammable.  
**Human health effects:** Harmful if swallowed (Acute Toxicity 4). Harmful if inhaled (Acute Toxicity 4). Causes damage to organs (STOT SE 1).

**Label elements:**



**Signal word:** Danger

**Hazard statements:**

H225: Highly flammable liquid and vapour.  
 H302: Harmful if swallowed.  
 H332: Harmful if inhaled.  
 H370: Causes damage to organs.

**Precautionary statements:**

P210: Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.  
 P233: Keep container tightly closed.  
 P240: Ground and bond container and receiving equipment.  
 P241: Use explosion-proof equipment.  
 P242: Use non-sparking tools.  
 P243: Take action to prevent static discharges.  
 P260: Do not breathe dust, fume, gas, mist, vapours, or spray.  
 P264: Wash hands and face thoroughly after handling.  
 P270: Do not eat, drink, or smoke when using this product.  
 P271: Use only outdoors or in a well-ventilated area.  
 P280: Wear impervious rubber gloves and boots, protective clothing, and chemical safety goggles.  
 P301+P317: IF SWALLOWED: Get medical help.  
 P330: Rinse mouth.  
 P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].  
 P304+P317+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.  
 P308+P316: IF exposed or concerned: Get emergency help immediately.  
 P403+P235: Store in a well-ventilated place. Keep cool.  
 P405: Store locked up.  
 P501: Dispose of content/container to suitable landfill in accordance with local regulations.  
**Other hazards:** Flammable.  
**Toxicity:**  
 Classification according to GHS: Category 4

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Substance / Mixture:** Mixture  
**Composition:**

## DIMETHOATE 400 EC

## SAFETY DATA SHEET

Chemical name	CAS	Conc. (m/v %)	Classification EC 1272/2008
Dimethoate	60-51-5	40.8 %	Acute Toxicity 4 (H302) Acute Toxicity 4 (H312)
Methanol	67-56-1	<60%	Flammable liquid 2 (H225) Acute Toxicity 3 (H301) Acute Toxicity 3 (H311) Acute Toxicity 3 (H331) STOT SE 1 (H370)
Dye Blue-Solvent Base	14233-37-5	<1%	Acute Toxicity 4 (H302)

### 4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure.

**Inhalation:** Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs. **Seek medical attention if you feel unwell after inhalation.**

**Skin:** Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical attention if irritation persists.

**Eyes:** Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention.**

**Ingestion:** Have victim rinse mouth thoroughly with water. **Do not induce vomiting, due to the aromatic solvent. Seek medical advice immediately.** If the person is alert and respiration is not depressed, give large quantity of water to drink. Never give anything by mouth to an unconscious person. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen. Qualified medical personnel should perform administration of gastric lavage or oxygen.

**Anticipated acute effects:** Harmful if inhaled. Harmful if swallowed.

**Anticipated delayed effects:** Not available.

**Most important symptoms / effects:** None known.

**Advice to physician:** Keep patient prone and quiet. Start artificial respiration immediately, if patient is breathing never give anything by mouth to an unconscious person. In serious cases, medical attention should be sought.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Use carbon dioxide or dry chemical for small fires and water fog or foam for large fires.

**Unsuitable Extinguishing Media:** High volume water jet. Use a water jet only to cool heated containers.

**Specific hazards:** Flammable.

**Special fire-fighting procedures:** Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Remain upwind of fire. Avoid inhaling hazardous vapours/fumes from burning materials. Remove container from fire area if possible and without risk. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Water can be used to cool unaffected containers but must be contained for later disposal. Contain fire control agents for later disposal. Avoid pollution of waterways by run-off from the site.

**Personal protective equipment:** Wear NIOSH / MSHA approved self-contained breathing apparatus and full protective gear.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Do not breathe in spray mist/fumes or vapours. Ventilate area of spill or leak, especially in contained areas.

**Protective equipment:** Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.

**Emergency procedures:** Alert firefighting personnel, evacuate unprotected personnel and animals.

**Environmental Precautions:** Prevent spilled product from entering sewers, waterways, or ground water.

## DIMETHOATE 400 EC

## SAFETY DATA SHEET

**Methods and Materials for Containment:** Contain spilt product by diking area with sand or earth.

**Methods and Materials for Clean-up:** Cover contained spill with an inert absorbent material such as sand, vermiculite, earth or other appropriate material. Vacuum, scoop, or sweep up material and place the material into a clean, dry, sealable container. Label containers with the contents and dispose of according to local regulations. Do not place spilt material back in original container. Do not re-use spilt material. Collect washings and add to the drums already collected. Do not flush spilt material or washings into drains or waterways. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. See section 13 for disposal considerations.

### 7. HANDLING AND STORAGE

#### Handling:

**Precautions for safe handling:** Harmful if inhaled & swallowed. Ensure adequate ventilation during handling and use. Do not inhale spray mist or vapours. Do not handle broken packages without protective equipment. Immediately clean up spills that occur during handling. Keep containers closed when not in use. In the case of contact with the product refer to **First Aid Measures – Section 4.**

**General occupational hygiene:** Practice good hygiene when using this product. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Launder all clothing before it is re-used.

#### Storage:

**Conditions for safe storage:** Keep under lock and key and out of reach of unauthorised persons, children, and animals. Store in its original, labelled container, tightly closed in an isolated, dry, cool and well-ventilated area. Do not store near heat, open flame, sources of ignition or hot surfaces. Avoid excess heat. Not to be stored next to foodstuffs, feed and water supplies. Avoid cross contamination with other pesticides and fertilisers.

**Incompatible substances and mixtures:** Refer to product label.

**Packaging material:** Plastic bottles and cans.

### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### Permissible concentration:

Components	Exposure limits	Type of exposure limit	Source
Methanol	200 ppm	8-hours TWA	<a href="http://www.osha.gov">www.osha.gov</a>

#### Engineering Controls:

It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire and other applicable regulations.

#### Personal Protective Equipment:

**Respiratory Protection:** For most well-ventilated conditions, no respiratory protection should be needed. If used in a poorly ventilated area (airborne concentrations exceed exposure limits), use a NIOSH approved, air-purifying respirator with cartridges / canisters approved for organic vapours.

**Hand Protection:** The use of chemically protective impervious gloves is recommended to prevent against skin contact.

**Eye Protection:** The use of chemical safety goggles is recommended to prevent against eye contact. Contact lenses are not protective eye devices.

**Skin and Body Protection:** Employees must wear appropriate protective (impervious) clothing, (rubber) boots, hat and equipment to prevent repeated or prolonged skin contact with this product. Do not wear leather clothing.

**Emergency eyewash:** Where there is any possibility that an employee's eyes may be exposed to this product, 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:** Bluish liquid.

**Odour:** Not available.

## DIMETHOATE 400 EC

## SAFETY DATA SHEET

**Odour threshold:** Not available.  
**pH (1% aqueous dilution):** 5.5 to 7.5  
**Melting point:** Not available.  
**Freezing Point:** Not available.  
**Boiling Point:** Not available.  
**Flash Point:** 41 to 44 °C.  
**Flammability:** Flammable.  
**Upper / lower explosion limits:** Not available.  
**Vapour Pressure (mm Hg):** Not available.  
**Relative Vapour Density:** Not available.  
**Density / Relative density:** 1.05 to 1.08 g/l at 20°C  
**Solubility:** Emulsifies in water.  
**n-octanol / water partition coefficient:** Kow (logPow) = 0.704  
**Auto-ignition temperature:** 295°C.  
**Decomposition temperature:** Not available.  
**Viscosity:** Not available.

### 10. STABILITY AND REACTIVITY

**Chemical stability:** The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50 °C, preferably below 30 °C, and not for prolonged periods in direct sunlight.

**Reactivity:** None known.

**Possibility of hazardous reactions:** Unlikely to occur.

**Conditions to avoid:** Extreme heat or exposure to flames.

**Incompatible materials:** The product is compatible with most other common pesticides but incompatible with alkaline materials and with sulphur-based formulations.

**Hazardous decomposition products:** Product undergoes decomposition at high temperatures. Avoid heating above ambient temperature. Toxic fumes (hydrogen sulphide, carbon oxides and sulphur oxides) may be released when the product decomposes on heating.

### 11. TOXICOLOGICAL INFORMATION

#### ACUTE TOXICITY:

**Oral LD<sub>50</sub> (24h)** > 600 mg/kg (rat).

**Dermal LD<sub>50</sub> (24h)** > 4900 mg/kg (rat).

**Inhalation LC<sub>50</sub> (4h)** > 4 mg/l (rat)

**Skin Irritation / Corrosion:** Not a skin irritant.

**Eye Damage / Irritation:** Not available.

**Skin Sensitization:** Not available.  
**Respiratory Sensitization:** Not available.  
**Reproductive cell mutagenicity:** Not available.  
**Carcinogenicity:** Not available.  
**Reproductive toxicity:** Not available.  
**Specific target organ toxicity – single exposure:** Causes damage to organs.  
**Specific target organ toxicity – repeated exposure:** Not available.  
**Aspiration hazard:** Not available.  
**Chronic Effects:** Not available.  
**POTENTIAL ADVERSE EFFECTS:**  
**Inhalation:** Harmful if inhaled.  
**Ingestion:** Harmful if swallowed.  
**Other information:** None known.

### 12. ECOLOGICAL INFORMATION

This product is not expected to be harmful to aquatic organisms.

#### ECOTOXICITY DATA: Dimethoate

##### Fish:

LC <sub>50</sub> (96 h)	Rainbow trout	24 mg/l
	Bluegill sunfish	31 mg/l
	sheepshead	>111
	minnows	mg/l

##### Daphnia:

EC <sub>50</sub> (48 h)		2 mg/l
-------------------------	--	--------

##### Algae:

E <sub>b</sub> C <sub>50</sub> and E <sub>r</sub> C <sub>50</sub> (72 h)	<i>Selenastrum capricornutum</i>	90.4 mg/l
--	----------------------------------	-----------

##### Birds:

Acute oral LD <sub>50</sub>	Mallard ducks	42 mg/kg
	Bobwhite quail	10.5 mg/kg
	Japanese quail	84 mg/kg
	Ring-necked pheasants	14.1 mg/kg

Dietary LC <sub>50</sub>	Mallard ducks	1374 mg/kg diet
	Bobwhite quail	90 mg/kg diet
	Japanese quail	346 mg/kg diet
	Ring-necked pheasants	396 mg/kg diet



## DIMETHOATE 400 EC

## SAFETY DATA SHEET

### Bees:

LD <sub>50</sub> (oral)	0.15 µg/bee
(contact)	0.12 µg/bee

### Worms:

LC <sub>50</sub>	earthworms	31 mg/kg soil
------------------	------------	---------------

### Other beneficial species:

L <sub>R50</sub> (7 d)	<i>Typhlodromus pyri</i>	2.24 g/ha
(48)	<i>Aphidius rhopalosiphi</i>	0.014 g/ha

**Plants:** In plants, the following metabolite transformations occur: oxidation to yield omethoate (q.v.), O-demethylation and N-demethylation of omethoate to yield O-desmethyl N-desmethyl omethoate, hydrolysis of amide bond to give dimethoate carboxylic acid and subsequent degradation to give O,O-dimethyl dithiophosphoric acid, demethylation and rearrangement to yield O-desmethyl dimethoate or O-desmethyl isodimethoate, demethylation of omethoate to give O-desmethyl omethoate and subsequent hydrolysis of the amide bond to give O-desmethyl omethoate carboxylic acid. Omethoate is classified as toxic and a strong cholinesterase inhibitor and appears to show similar rapid degradation in environmental compartments as dimethoate.

### ENVIRONMENTAL EFFECTS

**Persistence and degradability:** Adsorption and desorption constants have been shown to be a linear function of soil silt content. K<sub>oc</sub> ranges from 16.25 (sandy loam) to 51.88 (sand/loamy sand). Aerobic DT<sub>50</sub> 2–4.1 d. Photolytic DT<sub>50</sub> on soil surface 7–16 d. Low potential for leaching to groundwater because of rapid degradation in soil.

**Bio-accumulative potential:** Not determined.

**Mobility in soil:** Not determined.

**Other adverse effects:** Not determined.

### 13. DISPOSAL CONSIDERATIONS

**Waste:** Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or re-processed. Never pour untreated waste or surplus product into public sewers or where there is any danger of run-off or

seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Comply with local legislation applying to waste disposal. The product may be taken to a registered waste disposal site or incineration plant.

**Container:** Emptied containers retain product residues. Do not re-use the empty container for any other purpose. TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS: Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler [www.croplife.co.za](http://www.croplife.co.za). Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages.

### 14. TRANSPORT INFORMATION

**UN Number:** 1993

**Road Transport ADR / ORD:**

Class: 3  
Packaging group: III  
UN Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. Dimethoate 400g/l

**Maritime Transport IMDG / IMO:**

Class: 3  
Packaging group: III  
UN Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. Dimethoate 400g/l

**Marine pollutant (Y/N):** No

**Air Transport IATA / ICAO:**

Class: 3  
Packaging group: III  
UN Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. Dimethoate 400g/l

**Special / Environmental Precautions:** Wedge drums tightly to avoid movement

**Transport in bulk:** Refer to MARPOL 73/78, Annex II and the IBC code.

### 15. REGULATORY INFORMATION

**Safety, health and environmental regulations / legislation for the mixture:**

## DIMETHOATE 400 EC

## SAFETY DATA SHEET

OHSA 1993 Regulations for Hazardous Chemical Substances.

**Relevant information regarding restrictions:** None.

**EU regulation:** Regulation EC1272/2008 (EU-GHS/CLP)

**Other national regulations:** None.

**Chemical Safety Assessment carried out?** No

For detailed information on revisions, contact the Registration holder.

### 16. OTHER INFORMATION

**Packaging:** Packed in 150, 250, 500 millilitres and 1, 2 5, 10, 20, and 25 litres plastic bottles and cans labelled according to South African regulations and guidelines.

**Other hazard statements, abbreviations and explanations:**

**H301:** Toxic if swallowed.

**H311:** Toxic in contact with skin.

**H312:** Harmful in contact with skin.

**H331:** Toxic if inhaled.

**IATA:** International Air Transport Association.

**IBC:** International Bulk Chemical.

**ICAO:** International Civil Aviation Organization.

**IMDG:** International Maritime Dangerous Goods

**IMO:** International Maritime Organization.

**LD<sub>50</sub> value:** The median lethal dose or the amount of a toxic agent that is sufficient to kill 50 percent of a population within a certain period of time.

**TWA:** Time-weighted average – The average exposure over a specified period, usually a nominal eight hours.

**ST/STEL:** Short-term exposure limits.

**Disclaimer:** The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed. All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

### END OF DOCUMENT

**Compiled:** February 2008

**Reviewed:** May 2022

**Revision no.:** (1)

**Next revision:** May 2027