PARATHION 500 EC

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE

Product Name: **PARATHION 500 EC**
Other identifier: **Parathion-ethyl 500 EC**
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

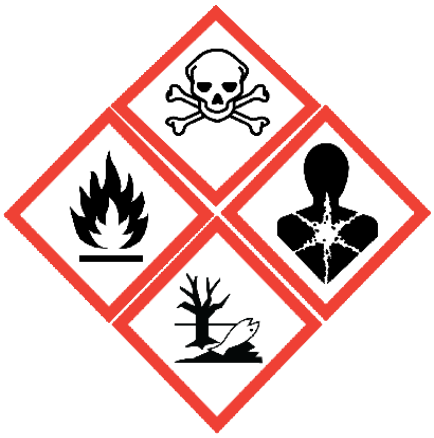
Emergency telephone numbers:
24 Hr Transport / Spill emergency no:
(Hazcall24) +27 86 044 4411
(Client: Villa Crop Protection)
Griffon Poison Information Centre +27 82 446 8946
(Client: Villa Crop Protection)
Poisoning Emergency telephone numbers:
Griffon Poison Information Centre +27 82 446 8946
Poisons 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**
Physical		
Flammable liquid	Flammable Liquid 3	H226
Health		
Oral	Acute Toxicity 1	H300
Dermal	Acute Toxicity 2 Skin Irritation 2	H310 H315
Inhalation	Acute Toxicity 2	H330
Single Target Organ Toxicity - Repeated Exposure	STOT RE 1	H372
Environment		
Aquatic Acute	Aquatic Acute 1	H400
Aquatic Chronic	Aquatic Chronic 1	H410

The most important adverse effects:
Physiochemical effects: Flammable liquid and vapour.
Human health effects:
Fatal if swallowed, inhaled or in contact with skin.
Causes skin irritation.
Causes damage to organs through prolonged or repeated exposure.

Label elements:



Signal word: Danger
Hazard statements:
H226: Flammable liquid and vapour.
H300: Fatal if swallowed.
H310: Fatal in contact with skin.
H315: Causes skin irritation.
H330: Fatal if inhaled.
H372: Causes damage to organs through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.
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 mists, vapours, or spray.
P262: Do not get in eyes, on skin, or on clothing.
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.
P273: Avoid release into the environment.
P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
P284: In case of inadequate ventilation wear respiratory protection.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER.
P302+P304+P316: IF INHALED OR ON SKIN: Get emergency medical help immediately.
P302+P352: IF ON SKIN: Wash with plenty of water and non-abrasive soap.

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [shower].
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P319: Get medical help if you feel unwell.
P330: Rinse mouth.
P361+P364: Take off immediately all contaminated clothing and wash before reuse.
P391: Collect spillage.
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.

Special labelling of certain mixtures:
None known.

Other hazards:
None known.

Toxicity:
Classification according to GHS: Category 1

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture.
Composition:

Chemical Name	CAS	Conc. (m/v %)	Classification EC 1272/2008
Ethyl parathion	56-38-2	50 %	Acute Toxicity 2 (H300) Acute Toxicity 3 (H311) Acute Toxicity 2 (H330) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Xylene	1330-20-7	>45%	Flammable Liquid 3 (H226) Acute Toxicity 4 (H312) Skin Irritation 2 (H315) Acute Toxicity 4 (H332)

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. Immediately consult a doctor.

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. **Seek medical attention 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. Persons who become sensitized may require specialised medical management with anti-inflammatory agents. **Seek medical attention immediately**.

Eye contact: 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. Obtain medical attention if irritation persists.

Ingestion: Seek medical attention immediately or call a poison control centre for treatment advice. Do not induce vomiting, due to the aromatic solvent. Do not give anything by mouth to an unconscious person. If the person is alert, rinse mouth thoroughly with water.

Anticipated acute effects: Fatal if swallowed, inhaled or in contact with skin. Causes skin irritation.

Anticipated delayed effects: Causes damage to organs through prolonged or repeated exposure.

Most important symptoms/effects: nausea, headache, tiredness, giddiness, blurred vision and pupillary constriction. Depending on severity of poisoning these symptoms become worse with the onset of vomiting, abdominal pain, diarrhoea, sweating and salivation. Confusion, ataxia, slurred speech, loss of reflexes are some of the central nervous system effects may lead to misdiagnosis of acute alcoholism.

Overexposure effects: After **inhalation of vapours or aerosols** effects appear within minutes: ocular and respiratory effects generally appear first. This includes marked miosis, ocular pain, conjunctival congestion, diminished vision, ciliary spasm and brow ache.

With **acute systemic absorption**, miosis may not be evident due to sympathetic discharge in response to the hypotension. 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 broncho-constriction and increased bronchial secretion. Gastrointestinal symptoms occur earliest after ingestion and include anorexia, nausea and vomiting, abdominal cramps, and diarrhoea.

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

Severe intoxication is manifested by extreme salivation, involuntary defecation and urination, sweating, lacrimation, penile erection, bradycardia and hypotension.

The airway should be kept clear to maintain respiration, particularly when the patient is unconscious or has

vomited. The mouth and pharynx should be cleared and dentures removed. The jaw should be supported and the patient placed in a face down position with the head down and turned to one side, with the tongue drawn forward. First aid should include, if necessary, mouth-to-nose respiration, cardiac massage and avoidance of injury in patients with trauma.

Advice to physician: Atropine must be administered 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. The therapeutic objective is to achieve atropinisation, as evidenced by dilation of the pupils, drying secretion, pulse rate of over 120/min and flushing skin. To prevent gastrointestinal absorption in the unconscious that have swallowed this product, perform stomach lavage using bicarbonate solution and activated charcoal.

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

In **severe cases** a total atropine dose of 20 to 80 mg in the first hour may be necessary, with repeated drug administration at 3 to 10 min intervals. When signs of atropinisation appear, the dose and frequency of administration should be reduced to a schedule that will maintain full atropinisation for at least 24 hours. Overdosage with atropine is rarely serious, but underdosage may be fatal in poisoning with organophosphorous compounds. In any severe progressive case of poisoning a cholinesterase reactivator e.g. pralidoxime (2PAM), if available, should be administered, preferably within 8 hours after intoxication. An average dose is 1 g for an adult (up to 50 mg/kg for children), usually given half as a single intramuscular or intravenous injection and the other half as an intravenous infusion with glucose and or saline. In severe cases this treatment may be repeated in 1 to 2 hours, then at 10 to 12 hour intervals if needed, but not beyond 24 hours, or 48 hours at the most. Pralidoxime should be administered very slowly. If respiration is depressed during or after injection, pulmonary ventilation should be assisted mechanically. Toxogonin is a more recent cholinesterase reactivator. It can be administered instead of 2PAM at a dose of 250 mg intramuscularly for adults (4 to 8 mg/kg for children) and, if necessary, repeat after 1 to 2 hours. Diazepam should be included in the therapy of severe cases and whenever convulsions appear. Doses of 5 to 10 mg for adults (2 to 5 mg for children) can be administered intravenously or subcutaneously or per rectum, and repeated as required.

IMPORTANT: Because of their respiratory-depressant effects, **morphine** and similar drugs are **contraindicated** for patients poisoned with organophosphorous compounds. **Avoid aminoglycosides** and **succinylcholine**, which have a blocking effect on the neuromuscular junction. **Phenothiazines, reserpine and theophylline** are **contraindicated** in organophosphorous poisoning.

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, as this will spread the fire. Use a water jet only to cool heated containers.

Specific hazards: Decomposes with heat. Fire may produce irritating or poisonous vapours. **VOLATILE – DO NOT OPEN IN ENCLOSED SPACES.**

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 and 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: Avoid contact with eyes and skin. **Do not breathe in spray mist or fumes/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. This product is classified as very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Any spillages or uncontrolled discharges into watercourses should be reported immediately to the police and the Department of Water / Environmental Affairs.

Methods and Materials for Containment: Contain spilled 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 spilled material back in original container. Do not re-use spilled material. Collect washings and add to the drums already collected. Do not flush spilled 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: Fatal if swallowed, inhaled or in contact with skin. Avoid contact with eyes and skin. 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 tightly 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. 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: Fluorinated plastic containers.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Permissible concentration:

Components	Exposure limits	Type of exposure limit	Source
Parathion	0.05 mg/m^3	Up to 10-hour TWA	www.osha.gov
Xylene	100 ppm	8-hour TWA	www.osha.gov

Engineering Controls:
It is essential to provide adequate ventilation. The measures appropriate for a particular work site 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: Employee must wear appropriate chemical resistant rubber gloves (PVC or neoprene gloves) to prevent skin contact with this product.
Eye Protection: The use of full-face protection is recommended.
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 substance. 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 eyewash fountain or appropriate alternative within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light yellow liquid.
Odour: Characteristic sulphurous odour.
pH (1% aqueous dilution): Not available.
Melting point: Not available.
Freezing Point: Not available.
Boiling Point: Not available.
Flash Point: 23 - 60ºC.
Flammability: Flammable.
Upper/lower explosion limits: Not available.
Vapour Pressure (mm Hg): Not available.
Relative Vapour Density: Not available.

Density/Relative density: 0.990 g/mℓ
Solubility: Not available.
n-octanol/water partition coefficient: Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Decomposes at temperatures above 120 ºC.
Viscosity: Not available.

10. STABILITY AND REACTIVITY

Chemical Stability: The product is stable for 2 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: Strong oxidizers, strong bases, strong reducing agents.
Hazardous Decomposition Products: Fire may produce irritating or poisonous vapours.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
Calculated according to GHS.
Oral LD_{50} (24 h) >3 mg/kg (rat).
Dermal LD_{50} (24 h) >130 mg/kg (rat).
Inhalation LC_{50} (4 h) >0.05 mg/ℓ (rat).
Skin irritation/Corrosion: Causes skin irritation.
Eye Damage/Irritation: Not classified.
Skin Sensitization: Not classified.
Respiratory Sensitization: Not classified.
Reproductive cell mutagenicity: Not classified.
Carcinogenicity: Not classified.
Reproductive toxicity: Not classified.
Specific target organ toxicity – single exposure: Not classified.
Specific target organ toxicity – repeated exposure: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard: Not classified.
Chronic Effects: Not available.
POTENTIAL ADVERSE EFFECTS:
Inhalation: Fatal if inhaled.
Skin contact: Fatal in contact with skin.
Ingestion: Fatal if swallowed.

12. ECOLOGICAL INFORMATION

This product is very toxic to aquatic organisms with long lasting effects.

ECOTOXICITY DATA:
Parathion

Fish:		
LC_{50} (96 h)	Rainbow trout	1.5 mg/ℓ
	Golden orfe	0.58 mg/ℓ
Daphnia:		
LC_{50} (48 h)		2.5 µg/ℓ
Algae:		
ErC_{50}	*Scenedesmus subspicatus*	0.5 mg/ℓ
Bees:		
Toxic to bees.		
Worms:		
LC_{50}	*Eisenia fetida*	267 mg/kg.

ENVIRONMENTAL EFFECTS:
Based on information for the active ingredient
Plants: The major metabolites are paraoxon, diethylphosphate, 4-nitrophenol and photometabolites S-ethyl parathion and S-phenyl parathion.
Persistence and degradability: Rapidly degraded. Degradation results in CO_2.
Bio-accumulative Potential: Log K_{ow} 3.83. Following oral administration, 4-nitrophenol and paraoxon were the principa metabolites excreted. **Parathion** does not accumulate in the soil and non-cumulative in mammals.
Mobility in soil: Low mobility.
Other adverse effects: Not determined.

13. DISPOSAL CONSIDERATION

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. 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). Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages. Observe all labelled safeguards until container is destroyed.

14. TRANSPORT INFORMATION

UN NUMBER: **3279**

Road Transport ADR/IRD:

Class:	6.1
Packing Group:	I
UN Proper Shipping Name:	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O.S (Parathion 500 g/ℓ)

Maritime Transport IMDG/IMO:

Class:	6.1
Packing Group:	I
UN Proper Shipping Name:	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O.S (Parathion 500 g/ℓ)

Marine Pollutant (Y/N): Yes

Air Transport IATA/ICAO:

Class:	6.1
Packing Group:	I
UN Proper Shipping Name:	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O.S (Parathion 500 g/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:
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

16. OTHER INFORMATION

Packed in fluorinated 5, 10, 20, 25, 50 & 200 liters fluorinated plastic containers and labeled according to South African regulations and guidelines.

Other hazard statements, abbreviations and explanations:
H311: Toxic in contact with skin.
H312: Harmful in contact with skin.
H332: Harmful 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_{50} 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.
OEL/RL: Occupational exposure limit-recommended limit.
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: June 2022
Reviewed: June 2022
Revision no: (1)
Next revision: June 2027

For detailed information on revisions, contact the Registration holder.