



SAFETY DATA SHEET

EnviroMax Permethrin 500 EC Residual Insecticide

Section 1: Identification	
Product identifier:	EnviroMax Permethrin 500 EC Residual Insecticide.
Other means of identification:	Permethrin emulsifiable concentrate; synthetic pyrethroid insecticide
Recommended use of the chemical and restrictions on use	A liquid, synthetic pyrethroid insecticide concentrate suitable for a broad range of applications as described by the label.
Details of manufacturer	EnviroMax Technologies Pty Ltd Level 3, 549 Queen St., Brisbane, Queensland 4000, Australia
Emergency phone number	61- (0) 4099 26561

Section 2: Hazard Identification	
Hazard Classification:	HAZARDOUS SUBSTANCE. DANGEROUS GOODS* *See Section 14 Acute toxicity – oral – Category 4 Acute toxicity – dermal – Category 5
Signal Word:	WARNING
Hazard statements:	Harmful if swallowed or inhaled May cause sensitization by skin contact Harmful to aquatic organisms.
Safety Phrases:	S2 Keep out of reach of children. S20 When using, do not eat or drink. S23 Don not breathe vapour or spray S36/37 Wear suitable protective clothing.



Section 3: Composition / Information On Ingredients			
Chemical Identity of Ingredients			
Common Name	CAS Number	Concentration	TWA (mg/m ³)
Permethrin	52645-53-1	500 g/L	-
Aromatic hydrocarbons	64742-94-5	457 g/L	-
Other non-hazardous ingredients	-	To 100%	-

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Section 4: First Aid Measures

General Advice:

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor (at once). Have this MSDS with you when you call.

Inhalation:

Remove affected person to fresh air and observe until recovered. Seek medical advice if symptoms persist.

Skin Contact:

Wash with soap and plenty of water. Remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). If irritation persists, repeat flushing and obtain medical advice. Launder contaminated clothing before re-use.

Eye Contact:

Immediately flush the contaminated eye(s) with water for at least 15 minutes, holding the eyelid(s) open and taking care to rinse under eyelids as well.

Ingestion:

Wash out mouth with water. Do NOT induce vomiting. Keep patient at rest and contact the Poisons Information Centre or a doctor.

Advice to Doctor:

Treat symptomatically. Note that this product contains an aromatic hydrocarbon. Induction of vomiting may lead to inhalation of its vapours, which in turn may lead to lung damage. Therefore induction of vomiting is preferably performed under trained medical supervision.

Section 5: Fire Fighting Measures

Suitable extinguishing media:

Carbon dioxide, dry chemical or foam.

Hazards from Combustion Products

In the event of fire the following may be released: Hydrogen chloride (HCl); Carbon monoxide (CO); Carbon dioxide (CO₂).

Precautions for Fire Fighters and Special Protective Equipment

Wear self-contained breathing apparatus and protective suit. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat.

Hazchem Code

3Z.

Additional Information

Whenever possible, contain fire-fighting water by diking area with sand or earth. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Do not allow run-off from fire fighting to enter drains or water courses.

Section 6: Accidental Release Measures

Personal precautions

Use personal protective equipment, including face mask, face shield and gloves. Cover all skin areas. See section 8 below.

Avoid contact with spilled product or contaminated surfaces.

Keep unauthorized people away.

Environmental precautions

Prevent spillage from entering drains or water courses.

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Methods for cleaning up

Contain and absorb spilled material with absorbent material such as sand clay or cat litter and dispose of waste as indicated below or according to the Australian Standard 2507 - Storage and Handling of Pesticides. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7: Handling And Storage

Precautions for safe handling

Use only in accordance with the instructions provided on the container label, including the Safety Directions.

Conditions for safe storage

Store in a cool, dry, well ventilated location. Avoid excess heat. No smoking eating or drinking should be allowed where material is used or stored. Keep out of the reach of children and animals. Store in original containers only. Do not locate near or contaminate food or feed by storage or disposal. Wash all exposed skin surfaces prior to smoking drinking or eating. All workers should shower at the end of each work day after handling this product. Wash all clothing after each use.

Section 8: Exposure Controls / Personal Protection

National exposure standards

Exposure values at the TWA (Time Weighted Average) means the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. A time weight average (TWA) concentration for an 8 hour day, and 5 day week has not been established by Safe Work Australia for any of the ingredients in this product. There is a blanket recommendation of 10mg/m³ for inspirable dusts or mists when limits have not otherwise been established.

Biological limit values

No biological limit allocated.

Engineering controls

Use only in a well ventilated area.

Personal protective equipment

When opening the container and preparing spray or dip wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow-length PVC gloves and face shield or goggles.

Hygiene Measures

If product on skin, immediately wash area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

Section 9: Physical and Chemical Properties

Appearance:	Pale brown liquid
Odour:	Mild aromatic odour
pH:	6 to 7.5 pH (1% w/w solution)
Specific gravity:	1.05 at 20°C
Solubility in water:	Insoluble. Emulsifiable in water.
Flash point:	62°C (aromatic hydrocarbon)
Flammable limits in air:	Lower Flammable Limit: 0.6 ; Upper Flammable Limit: 7.0 (aromatic hydrocarbon)

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Section 10: Stability And Reactivity

Chemical stability

No conditions for reaction or polymerisation are known.

Chemical stability

Stable under normal storage conditions and use.

Conditions to avoid

Excess heat, ignition sources.

Incompatible materials

Strong acids, strong bases, strong oxidising agents.

Hazardous decomposition products

Thermal decomposition can lead to release of hydrogen chloride (HCl) and carbon oxides.

Hazardous reactions

None when stored and used as directed. Hazardous polymerisation is not possible. This product is unlikely to undergo polymerisation processes

Section 11: Toxicological Information

Acute toxicity

LD50 rat (oral): 711 mg/kg (product, calculated)

LD50 rat (dermal): 2,000 mg/kg (product, calculated)

Permethrin Toxicity

Acute Oral LD50: 430 mg/kg; Species: Rat

Acute Dermal LD50: >2,000 mg/kg Species: Rabbit

Acute Inhalation LC50: >0.685 mg/L; Species: Rat

Eye irritation: Mild irritant; Species: Rabbit

Skin irritation: Mild irritant; Species: Rabbit

Sensitisation: Is a sensitiser; Species: Guinea Pig

Reproductive effects:

Permethrin did not affect reproduction in studies. No no adverse reproductive effect (including indices of fertility, gestation, viability and lactation) was seen with permethrin at dosage levels of 500, 1000 and 2500 mg/kg (diet).

Teratogenic Effects: Permethrin was neither embryotoxic nor teratogenic in a mouse study at dosage levels of 5-150 mg/kg b.w.

Mutagenic Effects: Permethrin is not considered to be a mutagen based on negative results from a bacterial DNA assay, an Unscheduled DNA Synthesis (UDS) assay in primary rat hepatocytes, and an in vitro chromosome aberration study.

Carcinogenic Effects: Permethrin is not considered to be a carcinogen. No carcinogenic effects were found in mice or rats fed Permethrin daily for two years.

Organ Toxicity: Pyrethroids are poisons that affect the electrical impulses in nerves, over-stimulating nerve cells causing tremors and eventually causing paralysis.

Fate in Humans and Animals: Permethrin is considered to be readily absorbed when administered orally but minimally through skin. There is little tendency for Permethrin to accumulate in tissues. In rats the metabolism of permethrin is very rapid, metabolites with no known toxic effects. Elimination is rapid, with 50% excreted within 48 hours and 100% eliminated within 8 to 12 days.

Other information

The ADI for Permethrin is set at 0.05 mg/kg/day. The corresponding NOEL is set at 5 mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2002.

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Section 12: Ecological Information

ENVIRONMENTAL TOXICITY

Effects on Birds:

Permethrin is practically non-toxic to birds, acute oral LD50 for mallard ducks >9800 mg/kg. Permethrin did not affect the reproduction of female Japanese quail when fed up to 1.0 mg for 34 days.

Effects on Aquatic Organisms:

Permethrin is highly toxic to fish: 96-hour LC50 0.0125 mg/L (*Oncorhynchus mykiss*) and aquatic invertebrates: 96-hour LC50 0.00012 mg/L (*Daphnia magna*) & 96-hour LC50 0.00002 mg/L (*Americamysis bahia*). However field applications of Permethrin are not expected to affect fish and aquatic organisms significantly as it binds tightly to soil and breaks down quickly.

Effects on Other Animals (Non-target species):

Permethrin is highly toxic to honeybees: 48 hr contact LD50 29 µg/bee; and algae: chronic 96 hour NOEC (growth) of 0.0009 mg/L. Low toxicity to earthworms: Acute 14 day LC50 1440 mg kg⁻¹.

ENVIRONMENTAL FATE

Persistence:

Non-persistent with aerobic half-life in soil is 13 days in lab conditions, and 42 days in field dissipation studies. Moderately fast photolysis, 1 day DT50. Permethrin was stable to hydrolysis in a solution of pH 7 (31 days DT50).

Mobility:

Permethrin is considered relatively immobile in soils. Permethrin has little potential to leach into groundwater due to its strong tendency to bind to soil organic matter (GUS leaching potential index - 1.11).

Bioaccumulative potential:

Permethrin is predicted to have moderate potential to bioaccumulate in the environment.

Section 13: Disposal Considerations

Product Disposal:

On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemClear®).

Container Disposal

Do not use this container for any other purpose. Triple or preferably pressure rinse empty containers before disposal or recycling. Add rinsings to spray tank. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of water ways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

Section 14: Transport Information

UN Number:	3082
UN Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PERMETHRIN Emulsifiable)
Class and subsidiary risk(s):	Class 9 (Miscellaneous Dangerous Goods)
Packing Group:	III
Special precautions for user:	None
Hazchem Code:	3Z

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ADG Code: According to AU01, Environmentally Hazardous Substances in packagings, IBC or any other receptacle not exceeding 500 kg or 500 L are not subject to the ADG Code.

Section 15: Regulatory Information

SUSDP: 6 - POISON
Commonwealth requirements: None
AgVet Code Act 1994: Registered - 63598

Section 16: Other Information

Acronyms

AgVet Code Act 1994 – Agricultural and Veterinary Chemicals Code Act 1994

LD₅₀ or LC₅₀ – Estimated lethal dose / concentration to kill 50% of the population/sample.

EC₅₀ – Estimated exposure concentration to kill 50% of the population/sample.

NOEL – No observable effect level.

NOEC – No observable effect concentration.

NIOSH - National Institute for Occupational Safety and Health (USA)

SUSMP - Standard for the Uniform Scheduling of Medicines and Poisons

References

IUPAC Agrochemical Information: Permethrin <http://sitem.herts.ac.uk/aeru/iupac/515.htm>

World Health Organization Food And Agriculture Organization. Data Sheet On Pesticides No. 51: Permethrin http://www.inchem.org/documents/pds/pds/pest51_e.htm

United States Environmental Protection Agency: Deltamethrin. Permethrin Facts. (Reregistration Eligibility Decision (RED) Fact Sheet)
http://www.epa.gov/oppsrrd1/REDs/factsheets/permethrin_fs.htm

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