



## MATERIAL SAFETY DATA SHEET

# EnviroMax Bifenthrin 250EC Insecticide

### Section 1: Identification of the Product and Company

<b>Product Name:</b>	EnviroMax Bifenthrin 250EC Insecticide.
<b>Other Names:</b>	Bifenthrin Emulsifiable concentrate; Synthetic pyrethroid
<b>Recommended Use:</b>	For the control of certain insect and mite pests in various crops as specified on the product label.
<b>Supplier:</b>	EnviroMax Technologies Pty Ltd.
<b>Street Address:</b>	Level 3, 549 Queen St., Brisbane, Queensland 4000, Australia.
<b>Telephone:</b>	+61- (0) 4099 26561

### Section 2: Hazard Identification

<b>Hazard Classification:</b>	HAZARDOUS SUBSTANCE. DANGEROUS GOODS
<b>Risk Phrases:</b>	R20 Harmful by inhalation. R25 Toxic if swallowed. R36/37/38 Irritating to eyes, respiratory system and skin. R41 Risk of serious eye damage. R65 May cause lung damage if swallowed. R67 Vapours may cause drowsiness and dizziness. May be irritating to the skin, eyes and respiratory tract
<b>Safety Phrases:</b>	S2 Keep out of reach of children. S23 Do not breathe fumes or vapour. S24/25 Avoid contact with skin and eyes. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28 After contact with skin, wash immediately with plenty of soap and water. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S62 If swallowed, do not induce vomiting: seek medical advice immediately and show the container label or this MSDS.

### Section 3: Composition / Information On Ingredients

#### Chemical Identity of Ingredients

Common Name	CAS Number	Concentration
Bifenthrin	82657-04-3	25%
Hydrocarbon liquids	64742-47-8	> 60%
Other non-hazardous ingredients	-	< 10%

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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 from exposure area to fresh air immediately. If breathing has stopped, ensure airway is clear and perform artificial resuscitation. Seek medical attention immediately. Keep person warm and at rest. Treat symptomatically and supportively.

### Skin Contact:

Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention immediately if irritation develops or persists.

### Eye Contact:

Flush eyes immediately with large amounts of water or normal saline solution, occasionally lifting upper and lower lids until no evidence of chemical remains (at least 15-20 minutes). Get medical attention immediately.

### Ingestion:

If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give water to drink. Call a Poisons Information Centre or a doctor immediately. Do not give anything by mouth if person is unconscious or otherwise unable to swallow. If vomiting occurs, keep head below hips to prevent aspiration. Treat symptomatically and supportively.

### Advice to Doctor:

Treat symptomatically. If vomiting occurs, solvent present may cause pulmonary pneumonitis. Exposure to bifenthrin can result in sensations of tingling especially in the face. The effects are transient and generally disappear in one to two days. Topical application of vitamin E cream is effective in reducing discomfort.

## Section 5: Fire Fighting Measures

### Suitable extinguishing media:

Water fog or spray, Foam, Carbon Dioxide (CO<sub>2</sub>) or dry chemical.

### Hazards from Combustion Products

The dehydrated components may emit oxides of carbon, oxides of nitrogen and possibly minor quantities of hydrogen chloride or hydrogen fluoride.

### Precautions For Fire Fighters and Special Protective Equipment

Breathable air apparatus may have to be worn if material is involved in fires especially in confined spaces.

### Hazchem Code

2X.

### Additional Information

Contain water from fires to prevent escape to drains and water bodies.

## Section 6: Accidental Release Measures

### Accidental release

This product is hazardous to people and the environment. Wear protective clothing and contain spill by absorbing with clay, sand, soil or proprietary absorbent (such as vermiculite). Collect spilled material and waste in sealable open-top type containers for disposal. In the event of a major spill, prevent spillage from entering drains or water courses with absorbent material and call emergency services.

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## Personal protection

See section 8 below.

## 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 the closed, original container in a dry, well ventilated area, as cool as possible.

## Section 8: Exposure Controls / Personal Protection

### National exposure standards

The manufacturer of the solvent has recommended an occupational exposure limit of TWA 300 mg/m<sup>3</sup> (NIOSH). No exposure standards have been set for this product.

### Biological limit values

No biological limit allocated.

### Engineering controls

Use only in a well ventilated area.

### Personal protective equipment

When opening the container, preparing product for use and using the prepared product, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), a washable hat, elbow-length PVC gloves and goggles. Re-entry period: Do not enter treated area until spray has dried.

### Hygiene Measures

After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

## Section 9: Physical and Chemical Properties

<b>Appearance:</b>	Clear, straw-coloured liquid
<b>Odour:</b>	hydrocarbon like
<b>pH:</b>	6.80 (1% w/w solution)
<b>Vapour pressure:</b>	<2 mm HG @ 25°C (main solvent)
<b>Vapour density:</b>	>5 (main solvent)
<b>Boiling point/range:</b>	Solvents boil at 250°C to 313°C
<b>Freezing point:</b>	<0°C (main solvent)
<b>Solubility:</b>	Forms an emulsion in water
<b>Specific gravity:</b>	1.01
<b>Flash point:</b>	69°C
<b>Flammable limits in air:</b>	Combustible liquid C1
<b>Ignition temperature:</b>	No data available

## Section 10: Stability And Reactivity

### Chemical stability

Stable under normal storage conditions and use.

### Conditions to avoid

None known. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

### Incompatible materials

No particular incompatibilities. Store and use as directed.

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## Hazardous decomposition products

None when stored and used as directed.

## Hazardous reactions

None when stored and used as directed. Hazardous polymerisation is not possible.

## Section 11: Toxicological Information

### Inhalation

Breathing in high concentrations of vapour can cause nausea and irritation of the nose, throat and respiratory tract and produce central nervous system depression, which can lead to loss of coordination, impaired judgement and if exposure is prolonged, unconsciousness. Breathing in high concentrations of spray mist through use of this product may have similar effects noted above. Acute effects on the central nervous system are possible.

### Skin Contact

Will irritate the skin. Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis. Prolonged contact with the concentrate may result in absorption of bifenthrin in harmful amounts. Exposure to bifenthrin can result in sensations of tingling especially in the face. The effects are transient and generally disappear in one to two days. Topical application of vitamin E cream is effective in reducing discomfort.

### Eye Contact

Will irritate the eyes.

### Ingestion

Possible symptoms of exposure include: nausea, vomiting, abdominal pain and central nervous system depression.

### BIFENTHRIN TOXICITY

Bifenthrin is moderately toxic to mammals when ingested. Large doses may cause uncoordination, tremor, salivation, vomiting, diarrhoea, and irritability to sound and touch. LD<sub>50</sub> for Bifenthrin is about 54mg/kg in female rats and 70mg/kg in male rats. The LD<sub>50</sub> for rabbits whose skin is exposed to Bifenthrin is greater than 2,000mg/kg. Bifenthrin does not sensitize the skin of guinea pigs. Although it does not cause inflammation or irritation on human skin, it can cause a tingling sensation which lasts about 12 hours. It is virtually non-irritating to rabbit eyes.

### Reproductive effects:

The dose at which no toxic effect of Bifenthrin is observed on the mother (maternal toxicity NOEL) is 1mg/kg/day for rats and 2.67mg/kg/day for rabbits. At higher doses, test animals had tremors. The dose at which no toxic effect is observed on development (developmental toxicity NOEL) is 1mg/kg/day for rats and is greater than 8mg/kg/day for rabbits. Chronic Toxicity:

Based on available data, repeated exposures from use as per container label instructions, are not anticipated to cause additional significant adverse effects.

**Teratogenic Effects:** Bifenthrin does not demonstrate any teratogenic effects at the highest levels tested (100 ppm, approximately 5.5 mg/kg/day) in a two-generational study in rats.

**Mutagenic Effects:** Evidence of mutagenic effects from exposure to Bifenthrin are inconclusive. Studies of mouse white blood cells were positive for gene mutation. However, other tests of bifenthrin's mutagenic effects, including the Ames test and studies in live rat bone marrow cells, were negative.

**Carcinogenic Effects:** There was no evidence of cancer in a 2-year study of rats who ate as much as 10 mg/kg/day of Bifenthrin. However, an 87 week feeding study of mice with doses of 7, 29, 71, and 86 mg/kg showed a significantly higher, dose related trend of increased tumour incidence in the male urinary bladder. The incidence was significantly increased at 86 mg/kg/day. Also, females had

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higher incidences of lung cancer than the controls at doses of 7 mg/kg and higher. The EPA has classified Bifenthrin as a class C carcinogen, a possible human carcinogen.

**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:** Bifenthrin is absorbed through intact skin when applied topically. It undergoes similar modes of breakdown within animal systems as other pyrethroid insecticides. In mammals, Bifenthrin is rapidly broken down and promptly excreted. Rats treated with 4 to 5 mg/kg, excreted 70 % in the urine and 20% in the faeces within 7 days. After 7 days, the remaining Bifenthrin was found accumulated in tissues with high fat content such as the skin and fat in males and females and the ovaries of females. Bifenthrin is less toxic to warm-blooded animals, such as mammals, than to cold-blooded animals. There is no data to hand indicating any particular target organs.

### Other information

The ADI for Bifenthrin is set at 0.01mg/kg/day. The corresponding NOEL is set at 1mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2002.

## Section 12: Ecological Information

### ENVIRONMENTAL TOXICITY

#### Effects on Birds:

Bifenthrin is moderately toxic to many species of birds, HOWEVER risk to birds from instructed use is low. The dietary concentration (8 day) at which half of the test animals die, the  $LC_{50}$ , is 1,280 ppm for mallard ducks and 4,450 ppm for bobwhite quail. The acute oral  $LD_{50}$  is 1,800 mg/kg for bobwhite quail and 2,150 mg/kg for mallard ducks. There is concern about possible bioaccumulation in birds.

#### Effects on Aquatic Organisms:

Bifenthrin is very highly toxic to fish, crustaceans and aquatic animals. The  $LC_{50}$  after a 96-hour exposure is 0.00015 mg/L for rainbow trout, 0.00035 mg/L for bluegill, and 0.0016 mg/L for Daphnia. Because of its low water solubility and high affinity for soil, Bifenthrin is not likely to be found in aquatic systems.

#### Effects on Other Animals (Non-target species):

Bifenthrin is toxic to bees.

### ENVIRONMENTAL FATE

#### Persistence:

Half-life in soil is 7 days to 8 months depending on the soil type and the amount of air in the soil.

#### Mobility:

Bifenthrin does not move in soils with large amounts of organic matter, clay and silt. It also has a low mobility in sandy soils that are low in organic matter. Bifenthrin is relatively insoluble in water, so there are no concerns about groundwater contamination through leaching. Bifenthrin is not absorbed by plant foliage, nor does it translocate in the plant.'

#### Bioaccumulative potential:

Bifenthrin is not expected to bioaccumulate in the environment.

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## Section 13: Disposal Considerations

### Product Disposal:

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

<b>UN Number:</b>	3352
<b>UN Proper Shipping Name:</b>	PYRETHROID PESTICIDE, LIQUID, TOXIC - (contains Bifenthrin)
<b>Class and subsidiary risk(s):</b>	6.1 Poison
<b>Packing Group:</b>	III
<b>Special precautions for user:</b>	None
<b>Hazchem Code:</b>	2X

### ADG Code:

Considered dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.

## Section 15: Regulatory Information

<b>SUSDP:</b>	6 - POISON
<b>Commonwealth requirements:</b>	None
<b>AgVet Code Act 1994:</b>	Registered - 65395

## Section 16: Other Information

### Acronyms

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

**LD<sub>50</sub> or LC<sub>50</sub>** – Estimated lethal dose / concentration to kill 50% of the population/sample.

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

**SUSDP** - Standard for the Uniform Scheduling of Drugs and Poisons

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**END OF MSDS**