



SAFETY DATA SHEET

EnviroMax Bifenthrin 100SC Termiticide & Insecticide

Section 1: Identification	
Product identifier:	EnviroMax Bifenthrin 100SC Termiticide & Insecticide.
Other means of identification:	Bifenthrin suspension concentrate; synthetic pyrethroid insecticide
Recommended use of the chemical and restrictions on use	For the protection of structures from subterranean termite damage and for the control of subterranean termites and other urban arthropod pests around domestic and commercial structures specified on the product label
Details of manufacturer	EnviroMax Technologies Pty Ltd 504 Boundary Road, Archerfield QLD 4108, Australia
Emergency phone number	61- (0) 4099 26561
Section 2: Hazard Identification	
Hazard Classification:	Acute toxicity – oral – Cat 4 Acute toxicity-inhalation—Cat 4 Skin sensitisation—Cat 1B Carcinogenicity Cat 1B Specific Target Organ Toxicity-Repeated Exposure (nervous system)—Cat 2 Acute Aquatic Toxicity-Category 1 Chronic Aquatic Toxicity-Category 1
Signal Word:	Danger
Hazard statements:	H302-Harmful if swallowed H332-Harmful if inhaled H317-May cause an allergic skin reaction H350-May cause cancer H373-May cause damage to organs (nervous system) H400-Very toxic to aquatic life H410-Very toxic to aquatic life with long lasting effects
Precautionary statements:	Avoid breathing vapours or spray. Avoid contact with skin and eyes. Avoid breathing vapours or spray. Contaminated work clothing should not be allowed out of the workplace.
Prevention:	Wear protective chemical resistant clothing buttoned to the neck and wrist and a washable hat, half-face piece respirator with combined dust and gas cartridge and elbow length PVC or nitrile gloves. Wash hands, arms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.
Response:	IF SWALLOWED: Call a POISON INFORMATION CENTER (Ph 131 126) or doctor/physician if you feel unwell.

MATERIAL SAFETY DATA SHEET

Rinse mouth.

IF IN EYES wash out immediately with water for at least 15 minutes.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Specific treatment is not required.

Disposal:

Dispose of contents/container in accordance with container label instructions as per local State and Council requirements.

Symbols:



Health hazard

Chronic health hazard

Aquatic hazard

Section 3: Composition / Information On Ingredients

Chemical Identity of Ingredients

Common Name	CAS Number	Concentration
Bifenthrin	82657-04-3	10%
Other non-hazardous ingredients	-	< 60%

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:

No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

Skin Contact:

Blot or brush away excess chemical. Wash gently and thoroughly with water (use non-abrasive soap) for 10 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). If irritation persists, repeat flushing and obtain medical advice.

Eye Contact:

Quickly and gently blot or brush away product. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water until the product is removed or until a few minutes after irritation has ceased, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face.

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.

Advice to Doctor:

Treat symptomatically.

Section 5: Fire Fighting Measures

Suitable extinguishing media:

Soft stream water fog, Foam, CO2 or dry chemical. Contain all runoff.

MATERIAL SAFETY DATA SHEET

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

Isolate fire area. Evacuate downwind residents. Wear full protective clothing and self-contained breathing apparatus. Do not breathe or contact smoke, gases or vapours generated. Try to keep containers cool with soft stream water fog.

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. 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.

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. 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.

Section 8: Exposure Controls / Personal Protection

National exposure standards

No exposure standard for bifenthrin has been established by NOHSC Australia. However, the following exposure standard has been established: 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.

MATERIAL SAFETY DATA SHEET

Section 9: Physical and Chemical Properties

Appearance:	Beige to white liquid
Odour:	slight odour
pH:	7.4 (1% w/w solution)
Specific gravity:	1.032
Viscosity:	925 cP
Pourability:	3% residue
Suspensibility on Dilution with Water:	76% in 1WHO water
Spontaneity of Dispersions of Suspension Concentrates:	90% in 1WHO water
Wet sieve test:	0% residue on 75 µm sieve
Flash point:	No data available
Flammable limits in air:	No data available
Ignition temperature:	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.

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

Acute Oral (LD₅₀):	No studies available for the product, 545 mg/kg (rat, calculated from ingredients) Category 4
Acute Dermal (LD₅₀):	No studies available for the product, >5000 mg/kg (rabbit, calculated from ingredients), not classified as acute dermal hazard
Acute Inhalation (LC₅₀):	No studies available for the product, estimated LC ₅₀ =10.1 mg/L calculated from ingredients), Category 4
Skin irritation:	Not considered a skin irritant (rabbit)
Eye irritation:	Not considered an eye irritant (rabbit)
Skin sensitisation:	Skin sensitiser (guinea pig)

BIFENTHRIN TOXICITY (technical grade)

Bifenthrin is moderately toxic to mammals when ingested. Large doses may cause uncoordination, tremor, salivation, vomiting, diarrhoea, and irritability to sound and touch. LD50 for Bifenthrin is about 54mg/kg in female rats and 70mg/kg in male rats. The LD50 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.

MATERIAL SAFETY DATA SHEET

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 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 LC₅₀, is 1,280 ppm for mallard ducks and 4,450 ppm for bobwhite quail. The acute oral LD₅₀ 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 LC₅₀ is 0.00026 mg/L for rainbow trout (96-hour exposure), 0.00035 mg/L for bluegill (21 day NOEC), and 0.00011 mg/L for Daphnia (48 hour EC50). 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 26 days to 87 days in the field depending on the soil type.

Mobility:

MATERIAL SAFETY DATA SHEET

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 predicted to have some potential to bioaccumulate in the environment.

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

Road or Rail Transportation

Not subject to the ADG Code when transported by Road or Rail in Australia, in packages 500kg (L) or less; or IBCs.

Marine Transportation

UN Number:	3082
UN Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.- (CONTAINS BIFENTHRIN)
Class and subsidiary risk(s):	9
Packing Group:	III
Special precautions for user:	None
IMDG EMS Fire:	F - A
IMDG EMS Spill:	S - F

Air Transportation

UN Number:	3082
UN Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.- (CONTAINS BIFENTHRIN)
Class and subsidiary risk(s):	9
Packing Group:	III

Section 15: Regulatory Information

SUSDP:	6 - POISON
Commonwealth requirements:	None
APVMA:	Registered - 63649

Section 16: Other Information

Acronyms

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

MATERIAL SAFETY DATA SHEET

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.

NOEC – No observable effect level.

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

SUSMP - Standard for the Uniform Scheduling of Medicines and Poisons

References

IUPAC AGROCHEMICAL INFORMATION – Bifenthrin <http://sitem.herts.ac.uk/aeru/iupac/78.htm>

ECHA Summary of Classification and Labelling

<http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/68862>

EFSA-Conclusion on the peer review of the pesticide risk assessment of the active substance bifenthrin
http://www.efsa.europa.eu/sites/default/files/scientific_output/files/main_documents/2159.pdf

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