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.
- 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.
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:

<table>
<thead>
<tr>
<th>Health hazard</th>
<th>Chronic health hazard</th>
<th>Aquatic hazard</th>
</tr>
</thead>
</table>

Section 3: Composition / Information On Ingredients

<table>
<thead>
<tr>
<th>Common Name</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin</td>
<td>82657-04-3</td>
<td>10%</td>
</tr>
<tr>
<td>Other non-hazardous ingredients</td>
<td>-</td>
<td>&lt; 60%</td>
</tr>
</tbody>
</table>

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.
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.
Section 9: Physical and Chemical Properties

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

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

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral (LD₅₀)</td>
<td>No studies available for the product, 545 mg/kg (rat, calculated from ingredients) Category 4</td>
</tr>
<tr>
<td>Acute Dermal (LD₅₀)</td>
<td>No studies available for the product, &gt;5000 mg/kg (rabbit, calculated from ingredients), not classified as acute dermal hazard</td>
</tr>
<tr>
<td>Acute Inhalation (LC₅₀)</td>
<td>No studies available for the product, estimated LC₅₀=10.1 mg/L calculated from ingredients, Category 4</td>
</tr>
<tr>
<td>Skin irritation</td>
<td>Not considered a skin irritant (rabbit)</td>
</tr>
<tr>
<td>Eye irritation</td>
<td>Not considered an eye irritant (rabbit)</td>
</tr>
<tr>
<td>Skin sensitisation</td>
<td>Skin sensitiser (guinea pig)</td>
</tr>
</tbody>
</table>

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.
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:
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**

<table>
<thead>
<tr>
<th>UN Number</th>
<th>UN Proper Shipping Name</th>
<th>Class and subsidiary risk(s)</th>
<th>Packing Group</th>
<th>Special precautions for user</th>
<th>IMDG EMS Fire</th>
<th>IMDG EMS Spill</th>
</tr>
</thead>
<tbody>
<tr>
<td>3082</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.- (CONTAINS BIFENTHRIN)</td>
<td>9</td>
<td>III</td>
<td>None</td>
<td>F - A</td>
<td>S – F</td>
</tr>
</tbody>
</table>

**Air Transportation**

<table>
<thead>
<tr>
<th>UN Number</th>
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<td>9</td>
<td>III</td>
</tr>
</tbody>
</table>

### 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

LD_{50} or LC_{50} – Estimated lethal dose / concentration to kill 50% of the population/sample.
EC_{50} – 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
EFSA-Conclusion on the peer review of the pesticide risk assessment of the active substance bifenthrin

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