

## BRIGADE<sup>®</sup> GRANULAR INSECTICIDE

Date of Issue: 29<sup>th</sup> March 2006.

### 1. SUBSTANCE/PREPARATION AND COMPANY IDENTIFICATION

**Chemical name of active ingredient(s):** bifenthrin

**Recommended use:** Insect control in turf, growing media and amenity areas.

**Supplier:** Elliott Technologies Limited  
45 Kitchener Road  
Pukekohe  
Phone 0800 100 325

**Emergency telephone number:** 0800 Poison (0800 764 766) 24 Hours

### 2. HAZARDS IDENTIFICATION

**Hazard Classification:** 9.1A, 9.4B  
**Approved Handler Applies**  
This product must be tracked throughout the lifecycle of the product when more than 3kg is used per 24 hour period.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance/preparation Information on hazardous ingredients

Common name	CAS No	%
Bifenthrin	82657-04-3	0.2

### 4. FIRST-AID MEASURES

#### Description of necessary first aid measures:

#### Effects and symptoms

#### First-aid measures

**POTENTIAL HEALTH EFFECTS:** Effects from overexposure result from absorption through the skin or may result from inhaling the dust. Overexposure to this product may cause diarrhea. Contact with bifenthrin may occasionally produce skin sensations such as rashes, numbing, burning or tingling. These skin sensations are reversible and usually subside within 12 hours.

**MEDICAL CONDITIONS AGGRAVATED:** None presently known

#### Inhalation:

Remove to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.

#### Ingestion:

Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. If any discomfort persists, obtain medical attention.

#### Skin contact:

Wash with plenty of soap and water.

#### Eye contact:

Flush with plenty of water. Get medical attention if irritation

occurs and persists.

**Notes to a physician:**

Treat symptomatically

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## 5. FIRE-FIGHTING MEASURES

**HAZCHEM Code:**

3XE

**Extinguishing media :**

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

**Hazardous thermal (de)composition products:**

Slightly combustible. This material may support combustion at elevated temperatures. Carbon monoxide, carbon dioxide, hydrogen chloride and hydrogen fluoride

**Protection of fire-fighters:**

Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapours generated.

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## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:**

Wear protective clothing and personal protective equipment as prescribed in Section 8, "Exposure Controls/Personal Protection".

**Environmental precautions:**

Isolate and post spill area. Keep unprotected persons and animals out of the area. Keep material out of lakes, streams, ponds and sewer drains.

**Methods for cleaning up:**

Large spills should be covered to prevent dispersal. For dry material, use a wet sweeping compound or water to prevent the formation of dust. If water is used, prevent runoff or dispersion of excess liquid by diking and absorbing with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump all waste material, including absorbent, into a drum and label contents for disposal. To clean and neutralize spill area, tools and equipment, wash with a suitable solution of caustic or soda ash, and an appropriate alcohol (i.e., methanol, ethanol or isopropanol). Follow this by washing with a strong soap and water solution. Absorb, as above, any excess liquid and add to the drums of waste already collected. Repeat if necessary.

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## 7. HANDLING AND STORAGE

**Handling:**

Avoid skin and eye contact. MSDS must be made available when 5kg or more is available.

**Storage:**

Store in a cool, dry, well-ventilated place. Do not use or store near heat, open flame or hot surfaces. Store in original containers only. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

**Packaging materials:**

'Ecotoxic' signage is required when storing 100 kg or more. Plastic drop head drum.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Workplace Exposure Guidelines

#### Workplace exposure standards:

**Exposure Standards outside:** Not established

**The workplace:**

#### Engineering measures

**Exposure control measures:** Use local exhaust at all process locations where dust may be emitted. Ventilate all transport vehicles prior to unloading.

### Personal Protective Equipment

#### Detail specifications for equipment:

#### Respiratory system:

For dust exposure wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

#### Skin and body:

Depending upon concentrations encountered, wear coveralls or long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit, such as a PVC suit. Leather items - such as shoes, belts and watchbands - that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).

#### Hands:

Wear chemical protective gloves made of materials such as rubber or neoprene. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

#### Eyes:

For dust exposure, wear chemical protective goggles or a face shield.

#### General hygiene:

Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical State, odour & colour:** Tan, solid granules with a slightly musty odor.

**pH:** N/A

**Vapour Pressure:** N/A

**Vapour Density:** N/A

**Boiling Point:** N/A

**Freezing/melting point:** N/A

**Solubility:** N/A

**Specific gravity or density:** 1.39 g/mL (85 - 89 lb/cu ft.)

**Flashpoint:** N/A

**Octanol/water partition coefficient:** Log Pow (>6.0)

**Explosion properties:** Not Explosive

**Oxidation properties:**

Not an Oxidiser

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## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable
<b>Conditions to avoid:</b>	Excessive heat and fire
<b>Materials to avoid:</b>	None specified
<b>Hazardous decomposition Products:</b>	Fire; Carbon monoxide, carbon dioxide, hydrogen chloride and hydrogen fluoride
<b>Hazardous polymerization:</b>	Will not occur
<b>Specific Data:</b>	
<b>Hazardous reactions :</b>	None known

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## 11. TOXICOLOGICAL INFORMATION

This product has low oral and dermal toxicity. It is non-irritating to the eyes and skin. Excessive exposure to dust may irritate the respiratory system, skin and eyes. This product caused diarrhea in laboratory animals. Bifenthrin does not cause acute delayed neurotoxicity. Experience to date indicates that contact with bifenthrin may occasionally produce skin sensations such as rashes, numbing, burning or tingling. These sensations are reversible and usually subside within 12 hours.

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<b>Acute toxicity – Oral :</b>	<b>ORAL LD<sub>50</sub>:</b> >5000 mg/kg (rat)
<b>Acute toxicity - Dermal :</b>	<b>DERMAL LD<sub>50</sub>:</b> >2000 mg/kg (rabbit)
<b>Acute toxicity – Inhalation:</b>	Dust associated risk.
<b>Skin irritation :</b>	Non irritating
<b>Eye irritation:</b>	Non irritating
<b>Sensitization :</b>	Not a sensitizer

### Chronic toxicity

No data available for the formulation. In studies with laboratory animals, bifenthrin did not cause reproductive toxicity or teratogenicity. Tremors were associated with repeated exposure of laboratory animals to bifenthrin. In lifetime feeding studies conducted with rodents, a slight increase in the incidence of urinary bladder tumors at the highest dose in male mice was considered to be an equivocal response, not evidence of a clear compound-related effect. The overall absence of genotoxicity has been demonstrated in mutagenicity tests with bifenthrin.

<b>Carcinogenicity:</b>	Not a carcinogen
<b>Mutagenicity:</b>	Not mutagenic
<b>Reproduction toxicity:</b>	Not a reproductive toxin
<b>Other information :</b>	

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## 12. ECOLOGICAL INFORMATION

Unless otherwise indicated, the data presented below are for the active ingredient.

### ENVIRONMENTAL DATA:

#### Ecotoxicity

<b>E.E.L</b>	The EEL <sub>WATER</sub> for bifenthrin is set at 0.05 ng/L [= 0.00005 µg/L =0.00000005 mg/L] No other EEL established
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**T.E.L**  
**Aquatic**

Not established  
Bifenthrin is highly toxic to fish and aquatic arthropods and LC50 values range from 0.0038 to 17.8 µg/L. In general, the aquatic arthropods are the most sensitive species. Care should be taken to avoid contamination of the aquatic environment. Bifenthrin had no effect on mollusks at its limit of water solubility. Bifenthrin is only slightly toxic to both water fowl and upland game birds (LD50 values range from 1,800 mg/kg to >2,150 mg/kg).

**Bees**

Bifenthrin is toxic to bees but used according to label in this formulation, bees should not be affected.

**Soil**

In soil, bifenthrin is stable over a wide pH range and degrades at a slow rate which is governed by soil characteristics. Bifenthrin will also persist in aquatic sediments. Bifenthrin has a high Log Pow (>6.0), a high affinity for organic matter, and is not mobile in soil. Therefore, there is little potential for movement into ground water. There is the potential for bifenthrin to bioconcentrate (BCF = 11, 750).

**Bioaccumulative potential :**

Will not a bioaccumulate

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### 13. DISPOSAL CONSIDERATIONS

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**Methods of disposal :**

**SPILLED OR UNWANTED PRODUCTS:** Open dumping or burning of this material is prohibited. If spilled material can only be disposed of by use according to label.

**EMPTY CONTAINER:** Completely empty package into application equipment. Burn if permitted or puncture and bury in an approved landfill.

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### 14. TRANSPORT INFORMATION - International transport regulations

**UN number:**

**3077**

**Class or Division:**

**9**

**Sub Class:**

**N/A**

**Packing Group:**

**III**

**Marine Pollutant:**

Bifenthrin is a severe marine pollutant, but is not regulated in concentrations less than 1%. This material is not regulated for transport via any mode.

**Proper shipping name :**

**Environmentally Hazardous Substance, Solid, N.O.S (Bifenthrin)**

**Other Information:**

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### 15. REGULATORY INFORMATION

**ACVM Registered Number:**

Not an Agricultural Compound

**HSNO Approval Code:**

HSR02040

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### 16. OTHER INFORMATION

**Additional information:****Original Issue Date:** 28<sup>th</sup> September 2006**Revision Date:** N/A**Replaces:** N/A***Disclaimer***

This Safety Data Sheet is based on the most recent information available. To the extent permitted by law, users of this information accept that neither the manufacturer, Elliott Technologies Limited as distributor, nor any other distributor have any liability or responsibility whatsoever for any loss, damage or injury whether in contract or tort, whether direct, indirect or consequential howsoever arising in connection with the supply of these information.

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