
SAFETY DATA SHEET

BIFLEX® 100EC INSECTICIDE

1. PRODUCT AND COMPANY IDENTIFICATION

Material Identification	BIFLEX® 100EC INSECTICIDE
Product description	Bifenthrin insecticide.
Use	Insecticide in buildings and other structures.
Restrictions of Use	Refer to Section 15.
Company details	FMC New Zealand Limited 6 Clayton Street, Newmarket Auckland 1023
Telephone	Freephone: 0800 65 80 80
New Zealand Distributor	Garrards (NZ) Ltd Unit 4/27B Cain Road Penrose, New Zealand
Telephone	(09) 526 5232
Fax	(09) 526 4272
24-hour Emergency phone	National Poisons Centre 0800 POISON (0800 764 766)
Date of Issue	23 August 2018

2. HAZARDS IDENTIFICATION



Signal Word:

**ECOTOXIC
HARMFUL
TOXIC**

HSNO Classification 3.1D, 6.1D, 6.3A, ,6.5B, 6.9A, 9.1A, 9.2B, 9.3B, 9.4A

**Required
identification
Details:.**

ECOTOXIC:

Very toxic to aquatic organisms.
Toxic to the soil environment.
Toxic to terrestrial vertebrates.
Very toxic to terrestrial invertebrates.

HARMFUL:

May be harmful if swallowed, inhaled or absorbed through the skin.
May cause skin sensitisation from prolonged skin contact.
May cause skin and eye irritation.

TOXIC:

Presumed to cause damage to the nervous system from repeated oral exposure at high doses.

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Prevention Code

P102
P103
P210
P260
P264
P270
P271
P273
P280

Prevention Statement

Keep out of reach of children.
Read label before use.
Keep away from heat, sparks, open flames or hot surfaces. No smoking.
Do not breathe fumes, mist, vapours and spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective clothing.

Response code

P314
P330
P362
P391

P301 + P312
P302 + P352
P304 + P340

P305 + P351+P338
P332 + P313
P337 + P313
P370 + P378

Response Statement

Get medical advice/attention if you feel unwell.
Rinse mouth.
Take off contaminated clothing and wash before re-use.
Collect spillage.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use foam, CO₂ or dry chemical for extinction.

Storage Code

P403 + P235

Storage Statement

Store in a well-ventilated place. Keep cool.

Disposal Code

P501

Disposal Statement

Dispose of according to Local Regulations. Do not allow to enter waterways.

3.COMPOSITION/INFORMATION ON INGREDIENTS

<i>Chemical</i>	<i>CAS Number</i>	<i>Proportion</i>
Bifenthrin	82657-04-3	100 g/L
Liquid Hydrocarbons	64742-94-5	> 60% w/w
Other ingredients determined not to be hazardous	mixture	10 - 30 % w/w

4. FIRST AID MEASURES

Effects and symptoms

Harmful if swallowed or inhaled. Ingested in large doses by laboratory animals produced convulsions, tremors and bloody nasal discharge. This formulation also contains aromatic hydrocarbons which, if inhaled, may cause central nervous system depression, dizziness, disturbances in vision and respiratory irritation. Moderately irritating to the eyes and skin. Dermal sensitization may occur.

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Inhalation	If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. If breathing discomfort occurs, contact a doctor immediately.
Skin contact	Take off contaminated clothing. Rinse skin immediately for 15-20 minutes. If skin surface damaged, apply a clean dressing and seek medical attention. If skin not damaged, wash with soap and water. If irritation persists see a doctor.
Eye contact	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention
Ingestion	Call the National Poison Centre 0800 poison (0800 764 766). Have a person sip a glass of water if able to swallow. Do not induce vomiting.

5. FIRE FIGHTING MEASURES

Hazchem Code	3XE
Flashpoint	Product is a combustible liquid. Flash point 68°C.
Extinguishing Media	Foam, CO ₂ or dry chemical. Soft stream water fog if no alternatives. Contain all runoff.
Fire Fighting Instructions	Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe or contact smoke, gases or vapours generated.
Combustion products	On burning will emit toxic fumes of carbon monoxide, carbon dioxide, hydrogen chloride, chlorine, fluorine and hydrogen fluoride etc.

6. ACCIDENTAL RELEASE MEASURES

Spill precautions	Isolate and post spill area. Keep out unprotected persons and animals. Wear prescribed protective clothing and equipment as detailed in Section 8. Large spills should be dyked or covered to prevent dispersal. Vacuum shovel or pump spilled material into an approved container and dispose of as listed in section 13.
Spill clean up	To clean spill area, tools and equipment, wash with a solution of soap, water and acetic acid/vinegar. Follow this with a neutralisation step of washing the area with a bleach or caustic soda ash solution. Finally, wash with a strong soap and water solution. Absorb, as above, any excess liquid and add both solutions to the drums of waste already collected. Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.

7. HANDLING AND STORAGE

Handling	Read label before use. Keep away from heat, sparks, open flames or hot surfaces. No smoking. Do not breathe fumes, mist, vapours and spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective clothing.
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Storage

Store in a well-ventilated place. Keep cool. DO NOT store near (or allow to contact) fertilizers, fungicides or pesticides. Store in the closed original container, in a cool well ventilated area, out of direct sunlight. Store in a place away from children, animals, food, feed stuffs, seed and fertilizers. Do not store near sources of ignition or naked flames.

This product is classified as a C1 (Combustible Liquid) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to state regulations for storage and transport requirements..

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

No exposure standard for bifenthrin has been established by NOHSC Australia.

Engineering Controls

Use in well ventilated area only. Use local exhaust at all process locations where spray may be emitted. Ventilate all transport vehicles prior to unloading. Keep containers close when not in use.

Personal Protection

Work Clothing: Wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles.

Eye Protection: When using product, wear chemical protective goggles or face shield.

Respiratory Protection: If inhalation risk exists, wear a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (Australian Standards).

Gloves: Wear chemical protective gloves made of materials such as nitrile, Viton® brand or PVC when handling this product. Inspect regularly for leaks. Wash the outside of gloves with soap and water prior to removal.

Personal Hygiene: Clean water should be available for washing in case of eye or skin contamination. Wash skin before eating, drinking or smoking. Shower at the end of the workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Liquid.
Colour	Clear straw to golden yellow
Odour	Aromatic hydrocarbon odour.
Odour Threshold	N/A
Boiling Point	Not available
Melting Point	Not available
Freezing Point	Not applicable
Specific Gravity	0.88 g/mL.
Flash Point	68°C.
Flammability	Combustible liquid (C1).
Upper and Lower Exposure Limits	Not established
Solubility	Product emulsifies in water.

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Corrosivity	Non corrosive; compatible with stainless steel containers & polyethylene used in spray tanks and parts.
pH	Not applicable
Vapour Pressure	Not available
Vapour Density	Not available
Partition Coefficient:	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Kinematic Viscosity	Not available
Particle Characteristics	Not available

10. STABILITY AND REACTIVITY

Stability	Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.
Incompatible materials	Flammable or combustible materials, corrosives, oxidisers.
Conditions to avoid	Keep away from heat, sparks, open flames or hot surfaces. No smoking.
Decomposition Products	On burning will emit toxic fumes of carbon monoxide, carbon dioxide, hydrogen chloride, chlorine, fluorine and hydrogen fluoride etc.

11. TOXICOLOGICAL INFORMATION

Acute Effects:

Swallowed	Harmful if swallowed. The acute oral LD ₅₀ (rat) = 531 mg/kg.
Dermal	Not applicable.
Inhalation/Respiratory	Harmful if inhaled. Acute inhalation LC ₅₀ = 4.9 mg/L/4 hour
Eye	Causes serious eye irritation.
Skin	Causes skin irritation.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell	Not applicable.
Mutagenicity	
Systematic	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Causes damage to organs through prolonged or repeated exposure.

Chronic Effects	<p>No data available on this formulation. Bifenthrin technical did not cause teratogenicity or reproductive toxicity.</p> <p>Tremors were associated with with repeated exposure to dogs, rats, rabbits and mice to bifenthrin. The overall results from a battery of genotoxicity studies indicate that bifenthrin is not considered to be genotoxic. Ames test results were negative.</p> <p>Kidney and liver damage is possible from over-exposure to liquid hydrocarbons over long periods. Additionally, some reversible</p>
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haematopoietic depression has been observed in animals with extended exposure to liquid hydrocarbons.

12. ECOLOGICAL INFORMATION

HSNO Classes:

- 9.1A = Very toxic to aquatic life with long lasting effects.
- 9.2B = Toxic to the soil environment.
- 9.3B = Toxic to terrestrial vertebrates.
- 9.4A = Very toxic to terrestrial invertebrates.

No data is available on Brigade Granular Insecticide. The active ingredient, bifenthrin (0.2%), degrades at a moderate rate in soils ($t_{1/2}$ = 50 to 205 days), and more rapidly on the surface of bare soils ($t_{1/2}$ = 7 to 62 days). Bifenthrin is tightly bound in most soils and an extremely low water solubility. Bifenthrin is highly toxic to aquatic organisms

Bifenthrin is highly toxic to fish and aquatic arthropods with LC_{50} values ranging from 0.0038 µg/L 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. . Do not contaminate sewers, drains, dams, creeks or any other waterways with product or the used container.

Bifenthrin had no effect on molluscs at its limit of water solubility. Bifenthrin is only slightly toxic to both waterfowl and upland game birds (LC_{50} values range from 1800 mg/kg to > 2,150 mg/kg).

Persistence and Degradability

Bifenthrin Low

Bioaccumulation

Bifenthrin Low to Moderate

Mobility in soil

Bifenthrin None to Low

Other adverse effects

Bifenthrin No data available

13. DISPOSAL CONSIDERATION

Spills & Disposal: In the case of spillage, 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. Wear prescribed protective clothing and equipment. Keep out animals and unprotected persons. Keep material out of streams and sewers. Vacuum, shovel or pump waste into an approved drum. To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent, bleach or caustic soda) and add the solution to the drums of waste already collected. Label for contents. Dispose of drummed wastes, including decontamination solution, in accordance with the requirements of Local or State Waste Management Authorities.

Do not cut or weld metal containers. Vapours that form inside may create an explosion hazard.

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Dangerous to Fish: Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways

Disposal of empty, non-returnable containers: Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site. If recycling, replace cap and return containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If not available bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots. Empty containers and product should not be burnt.

Returnable and refillable containers: Empty containers fully into application equipment. Close all valves and return to point of supply for refill or storage. Do not burn empty containers or product.

14. TRANSPORT INFORMATION

This product is classified as a **Dangerous Good** for land transport under **NZS 5433: 2012**.

Road, Air, Marine

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (Contains 10% bifenthrin)
D.G. Class	9
UN Number	3082
Hazchem	3XE
Pack Group	III
Marine Pollutant	Yes

15. REGULATORY INFORMATION

ACVM Registered Number:	Not applicable
HSNO Approval Code:	HSR000277
Animal products Approval:	NZFSA Approved Type B (Animal Products except Dairy) AgriQuality New Zealand Limited approved 15 March 2001 for use in Dairy Factories Category B

16. OTHER INFORMATION

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists.
DT ₅₀	Time(days) for 50%loss.
EC ₅₀	Median effective concentration.
EEL	Environmental Exposure Limit.
ERMA	Environmental Risk Management Authority
HSNO	Hazardous Substances and New Organisms.
IARC	International Agency for Research on Cancer.
K _{oc}	Organic carbon partition coefficient (ml soil water/g organic carbon)
LC ₅₀	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD ₅₀	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.

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NOEL	No observable effect level.
OSHA	American Occupational Safety and Health Administration.
P _{ow}	The octanol-water partition coefficient is the ratio of the concentration of a chemical in octanol and in water at equilibrium at a specified temperature.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

Miscellaneous

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process

The information herein is given in good faith, but no warranty, express or implied is made.
Please contact the New Zealand proprietor, Garrards New Zealand, if further information is required.

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