

MATERIAL SAFETY DATA SHEET



BIFLEX TC

Date: 31-05-06

1. Company and Product Identification

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Product Name : Biflex TC
Active Ingredient : Bifenthrin
Chemical Family : Pyrethroid Insecticide
Formula : $C_{23}H_{22}ClF_3O_2$ (bifenthrin)
Synonyms : FMC 54800;(2-methyl [1,1'-biphenyl]-3-yl)methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate;
IUPAC: 2-methylbiphenyl-3-ylmethyl (Z)-(1*RS*)-*cis*-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate

2. Composition/Information on Ingredients

<u>Ingredient Name</u>	<u>CAS#</u>	<u>EU Number</u>	<u>PEL/TLV</u>	<u>EU Class</u>
Bifenthrin (2.5%)	82657-04-3	None	None	None

3. Hazards Identification

Emergency Overview:

- Light yellow to amber liquid with an aromatic hydrocarbon odor.
- Moderately combustible.
- For large exposures or fire, wear personal protective equipment.
- Keep out of drains and water courses.

Potential Health Effects: Effects from overexposure result from swallowing or coming into contact with the skin.

Medical Conditions Aggravated by Exposure: None presently known.

4. First Aid Measures

Eyes : Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.

Skin : Wash with plenty of soap and water.

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

Ingestion : Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

Notes to Medical Doctor : This product is expected to have low oral, dermal and inhalation toxicity. It is irritating to the eyes and minimally or non-irritating to the skin. This product contains aromatic hydrocarbons. Reversible skin sensations (paresthesia) may occur in some individuals and ordinary skin salves have been found useful in reducing discomfort. These skin sensations are reversible and usually subside after a few hours. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

5. Fire Fighting Measures

Flash Point : >49°C (CC)

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

Degree of Fire/Explosion Hazard : Moderately combustible. When heated above the flash point, this material releases vapors which, when mixed with air, can burn or be explosive.

Special Fire Fighting Procedures : Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapor generated.

Hazardous Decomposition Products : Carbon monoxide, carbon dioxide, hydrogen fluoride, and hydrogen chloride.

6. Accidental Release Measures

Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8, "Exposure Controls/Personal Protection". Keep unprotected persons and animals out of the area.

Keep material out of streams and sewers. Dike to confine spill and absorb with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump waste into a drum and label contents for disposal.

To clean and neutralize spill area, tools and equipment, wash with a suitable solution of caustic/soda ash and an appropriate alcohol (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. Dispose of drummed waste according to the method outlined in section 13, "Disposal Considerations".

7. Handling and Storage

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

8. Exposure Controls/Personal Protection

- Ventilation** : Use local exhaust at all process locations where vapor or mist may be emitted. Ventilate all transport vehicles prior to unloading.
- Work Clothing** : 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 rubber rain 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).
- Eye Protection** : For splash, mist or spray exposure, wear chemical protective goggles or a face shield.
- Respiratory protection:** For splash, mist or spray exposure, wear a properly fitted hair-face or full-face air purifying respirator which is approved for pesticides.
- Gloves** : Wear chemical protective gloves made of materials such as nitrile, neoprene or Viton® brand. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.
- Personal 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.

9. Physical/Chemical Properties

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| <u>Appearance</u> : Light Yellow to Amber liquid | <u>Molecular Weight</u> : 422.88 (bifenthrin) |
| <u>Odor</u> : Aromatic hydrocarbon | <u>Flash Point</u> : >49°C (CC) |
| <u>Specific Gravity</u> : 0.87-0.89 @ 25°C (water = 1) | <u>Weight per Volume</u> : 870-890 g/L |
| <u>Solubility (H2O)</u> : Emulsifies | |

10. Stability and Reactivity

- Stability** : Stable
- Hazardous Polymerization** : Will not occur
- Conditions/Materials to Avoid (Incompatibility)** : Excessive heat and fire.

11. Toxicological Information

- Oral LD₅₀** : 1657 mg/kg (rat)
- Inhalation LC₅₀** : > 5.5 mg/L/4 hr (rat)
- Dermal LD₅₀** : > 2,000 mg/kg (rabbit)
- Carcinogenicity:** **IARC:** No **NTP:** No **Other** (OSHA): No

12. Environmental Information

The information presented below is for the active ingredient, bifenthrin.

Physical/Environmental Properties :

In soil, bifenthrin is stable over a wide pH range and degrades at a slow rate which is governed by soil characteristics. Bifenthrin has a high Log P_{ow} (>6.0), a high affinity for organic matter, and is not mobile in soil. Therefore, there is negligible potential for movement into ground water. Bioconcentrate (BCF =11,750).

Environmental Toxicology :

Bifenthrin is highly toxic to fish and aquatic arthropods, and LC50 values range from 0.0038 g/L to 17.8 g/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 waterfowl and upland game birds (LD50 values range from 1800 mg/kg to >2150 mg/kg).

13. Disposal Considerations

Open dumping or simple burning of this pesticide or its packaging is prohibited. The packages or surplus materials and washings will be disposed in a safe manner as per the prevailing law so as to prevent environmental or water pollution.

14. Transportation Information.

Pesticide, liquid, toxic, flammable. Transport in properly sealed and labeled containers.

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