

# MATERIAL SAFETY DATA SHEET



## BIFLEX TC

ASTRA INDUSTRIAL COMPLEX CO., LTD. "ASTRACHEM"  
P.O. Box 30447, AL-KHOBAR 31952  
KINGDOM OF SAUDI ARABIA  
Tel # (+966) 3 8121 406  
Revision Date :15/02/2018

### 1. PRODUCT IDENTIFICATION

**Product Name** : Biflex TC  
**Chemical Class** : Pyrethroid Insecticide  
**Active ingredient** : Bifenthrin  
**Molecular Formula** : C<sub>23</sub>H<sub>22</sub>ClF<sub>3</sub>O<sub>2</sub>  
**Uses** : BIFLEX TC is a termiticidal concentrate insecticide used in public health for the termites control before and after constructions.  
**Producer** : Astra Industrial Complex Co., Ltd.  
P.O. Box 30447, Al-Khobar 31952  
Kingdom of Saudi Arabia  
Emergency Tel # (+966) 3 8121 406

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

**Bifenthrin Technical**  
**CAS No.** 82657-04-3  
**Chemical Name:** 2-methylbiphenyl-3-ylmethyl (Z)-(1RS, 3RS)-3-(2-chloro-3, 3, 3-trifluoroprop-1-enyl)-2, 2- dimethylcyclopropanecarboxylate

Ingredient Name	CAS#	OSHA-PEL	ACGIH-TLV	Other
Bifenthrin (25.1% w/w)	82657-04-3	None	None	None

### 3. HAZARD IDENTIFICATION

#### Emergency Overview

Immediate Concerns: Viscous liquid, crystalline solid or waxy solid with a very faint, slightly sweet odor.

Slightly combustible. May support combustion at elevated temperatures.

Thermal decomposition and burning may form toxic by-products. For large exposures or fire, wear personal protective equipment .highly toxic to fish and aquatic organisms. Keep out of drains and water courses.

Moderately toxic if swallowed

#### Potential Health Effects;

Effects from overexposure result from either swallowing or coming into contact with the skin. Symptoms of overexposure include bleeding from the nose, tremors and convulsions. Contact with this product may occasionally produce skin sensations such as rashes, numbing, burning and tingling. These sensations are reversible and usually subside within 12 hours.

**Medical Conditions Aggravated:** None presently known

#### Primary Routes of Entry:

Acute and chronic effects from overexposure may result from inhalation, ingestion, or absorption through the skin.



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### 4. FIRST AID MEASURES

- Eye:** Flush eyes with for at least 15 minutes. Lift the upper and lower eyelids intermittently. See an ophthalmologist.
- Skin:** Remove contaminated clothing and wash with soap and water. If irritation persists, see a physician.
- Ingestion:** Do not induce vomiting or give anything by mouth to an unconscious person. Contact a medical doctor.
- Inhalation:** Remove victim to fresh air. If not breathing administer artificial respiration. Avoid unprotected mouth to mouth resuscitation. GET MEDICAL ATTENTION.
- Note to Physician:**  
Removal of exposure and symptomatic and supportive treatment is recommended. Gastric lavage with an endotracheal tube in place should be considered as aromatic hydrocarbons in this formulation may produce a fatal pneumonitis if aspirated.

### 5. FIRE FIGHTING MEASURES

**Fire and Explosion:**

Flash point and Method: 42 °C (108 F)

**Extinguishing Media:**

Foam, CO<sub>2</sub> 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 release flammable vapors which, when mixed with air, can burn or be explosive. Sealed, overheated containers may present an explosion hazard.

**Firefighting procedures:**

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

**Hazardous Decomposition Products:**

Carbon monoxide, carbon dioxide, hydrogen chloride and hydrogen fluoride.

**Hazardous Polymerization:** Will not occur

**Conditions to Avoid (Incompatibility)**

Excessive heat, and fire and oxides. Thermal decomposition and burning may produce toxic by-products.

### 6. ACCIDENTAL RELEASE MEASURES

**Steps to be taken if material is released or spilled:**

Isolate and 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.





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Keep material out of streams and sewers. If Liquid: Dike to confine spill and absorb with an absorbent such as clay, sand or soil. If SOLID: 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 waste into a drum and label contents for disposal.

Open dumping or burning of this material or its packaging is prohibited. An acceptable method of disposal is to burn in an incinerator in accordance with all local, state and federal environmental laws, rules, standards and regulations. Because acceptable methods of disposal may vary by location, and because regulatory requirements any change, the appropriate regulatory agencies should be contacted prior to disposal. Steel containers which held these materials may be cleaned by being triple-rinsed, and recycled with the rinsate being incinerated. Do not cut or weld metal containers. Vapors that form inside may create an explosion hazard.

To clean and neutralize spill area, tools and equipment, wash with suitable solution of caustic or soda ash, and as 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. Dispose of drummed waste according to the method outlined in Section 13, "Disposal Considerations"

### 7. HANDLING AND STORAGE

#### General Procedures:

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

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal protection recommendations for mixing or applying this product are prescribed on the product label. Those directions should be followed. Information stated below provides useful, additional guidance.

#### Ventilation:

Use local exhaust at all process locations to control employee exposure. Store in a well-ventilated area. Thoroughly ventilate all transport vehicles prior to unloading.

#### Work Clothing:

Depending upon concentrations encountered, wear long-sleeved uniform or coveralls and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit such as a rubber rain suit. A safety shower should be located nearby. Launder all clothing before reuse.

#### Eye Protection:

For splash, vapor or mist exposure, wear chemical protective goggles or full-face shield. Emergency eyewash fountain should be located nearby.

#### Engineering Controls:

General air replacement or dilution ventilation is sufficient for material handling and



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storage, but local ventilation should be used when removing this product from containers. Ventilate all transport vehicles prior to unloading.

### Personal Protective Equipment

Eyes and Face: For splash, mist, vapor or dust exposure wear chemical protective goggles or a face shield.

### Respiratory:

For vapor or mist 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.

### Protective 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 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).

### Work hygienic practices:

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.

### Gloves:

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Assay:	"Bifenthrin" 25.1 % w/w
Appearance:	Clear light yellow to light brown liquid free from visible impurities
Density:	0.953 gm/mL
pH (undiluted):	5.5
Persistence Foam:	Max 60 ml after 1 min
Flash point:	> 40 °C

## 10. STABILITY AND REACTIVITY

Stability:	Stable
Condition to avoid:	Excessive heat and fire. Hazardous
Polymerization:	will not occur

## 11. TOXICOLOGICAL INFORMATION

### Toxicology Data:

#### Technical Bifenthrin:

Acute Oral LD50 (rat)	53.4 mg/kg
Dermal LD50 (rat)	>2000 mg/Kg (rabbit)





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### Formulation:

Acute Oral LD50 (rat)	262 mg/kg
Acute Dermal LD50 (rat)	>2000 mg/Kg (rabbit)
Acute Inhalation LC50	1.86 mg/l (Rat, female)
Eye Irritation (Rabbit)	Minimally irritating
Skin Irritation (Rabbit)	Non-irritating
Skin Sensitization	Sensitizing

### Acute effects from overexposure:

Bifenthrin is moderately toxic if swallowed and has low dermal toxicity. It is non-irritating to the skin and practically non-irritating to the eyes. Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge. 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.

### Chronic effects from Overexposure:

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 does 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.

### Carcinogenicity:

IARC:	Not listed
NTP:	Not listed
OSHA:	Not listed
Other:	(ACGIH) not listed

## 12. ECOLOGICAL INFORMATION

### Environmental Data

Bifenthrin has moderate stability in the soil under aerobic conditions (half-life range from 65 – 125 days depending on soil type) and is stable at a wide range of pH values. Bifenthrin has a high log  $p_{ow}$  (>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)

### Ecotoxicological Information:

Bifenthrin is highly toxic to fish and aquatic arthropods and LC50 values range from 0.0038 to 17.8  $\mu\text{g/L}$ . 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 water fowl and upland game birds (LD50 Values range from 1,800 mg/kg to >2,150 mg/kg)



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### 13. DISPOSAL CONSIDERATION

#### Disposal Method:

Open dumping or burning of this material or its packaging is prohibited. If spilled material cannot be disposed of by use according to label instructions, an acceptable method of disposal is to incinerate in accordance with local, state and national environmental laws, rules, standards and regulations. However, because acceptable methods of disposal may vary by location and regulatory requirements may change, the appropriate agencies should be contacted prior to disposal.

#### Empty Container

Non-returnable containers, which held this material, should be cleaned, prior to disposal, by triple rinsing. Containers which held this material may be cleaned by being triple-rinsed, and recycled, with the rinsate being incinerated. Do not cut or weld metal containers. Vapors that form may create an explosion hazard.

### 14. TRANSPORT INFORMATION

**Proper Shipping Name:** Pyrethroid pesticide, liquid, toxic, flammable flash point  $\geq 23^{\circ}\text{C}$   
**UN. No:** 3351  
**Hazard Class:** 6.1  
**Packing group:** III  
**Subsidiary Risks:** 3

### 15. REGULATORY INFORMATION.

Public Health pesticide.

### 16. OTHER INFORMATION

This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace based on publicly available and internally available information. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

