ASTRA INDUSTRIAL COMPLEX CO., LTD. (**ASTRACHEM**)
P.O. BOX 30447, AL-KHOBAR 31952
KINGDOM OF SAUDI ARABIA
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MATERIAL SAFETY DATA SHEET

TALSTAR® 25EC

ASTRA INDUSTRIAL COMPLEX CO., LTD. (**ASTRACHEM**)
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KINGDOM OF SAUDI ARABIA

1. PRODUCT IDENTIFICATION

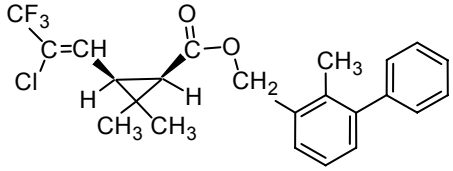
Product Name : ***TALSTAR®*** 25EC

Chemical Class : **Pyrethroid**

Use: **Talstar** 25EC is an Effective against a broad range of foliar pests, including Coleoptera, Diptera, Heteroptera, Homoptera, Lepidoptera and Orthoptera; it also controls some species of Acarina. Crops include cereals, citrus, cotton, fruit, grapes, ornamentals and vegetables. Rates range from 5 g/ha against Aphididae in cereals to 45 g/ha against Aphididae and Lepidoptera in top fruit.

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

Substance	Proportions (% w/w)	Chemical structure
Bifenthrin 92.5% Technical **CAS No.** *82657-04-3* **Chemical Name**: 2-methylbiphenyl-3-ylmethyl (*Z*)-(1*RS*,3*RS*)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC).	*3.06* (25 ± 4 g/L)	
Blend of ionic and* non *ionic emulsifiers	8.48	
Organic solvents	88.46	

3. HAZARD IDENTIFICATION

Emergency Overview:

Immediate Concerns:

Beige liquid a bland odor.

Slightly combustible. May be 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 inhaled.

Potential Health Effects:

Effects from overexposure may result from either swallowing, inhaling or coming into contact with the skin or eyes. Symptoms of overexposure include bleeding from the nose, tremors and convulsions. 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.

4. FIRST AID MEASURES

First Aid:

Eye:

Flush with plenty of water. Get medical attention if irritation occurs and persists.

Skin:

Wash with plenty of soap and water.

Ingestion:

Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with a finger or by giving syrup of ipecac. Never induce vomiting or give anything by mouth to an unconscious person. Contact a medical doctor.

Inhalation:

Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

Notes to Medical Doctor:

This product has moderate inhalation, and low oral and dermal toxicity. It is practically non-irritating to the eyes and non-irritating to the skin. Reversible skin sensations (paresthesia) may occur and ordinary skin salves have been found useful in reducing discomfort. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE FIGHTING MEASURES

Flash point:

Extinguishing Media:

Foam, CO_2 or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

Fire Fighting Hazards:

Isolate fire area. Evacuate downwind. Wear full protective clothing and a self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

Hazardous Decomposition Products:

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

Fire / Explosion Hazards:

Slightly combustible. This material may support combustion at elevated temperatures.

6. ACCIDENTIAL RELEASE MEASURES

Release Notes:

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 lakes, streams, ponds and sewer drains. Dike to confine spill and absorb with a non-combustible absorbent such as a 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 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.

7. HANDLING AND STORAGE

General Procedures.

Keep in a cool, dry, well-ventilated place. Do not use or store near heat, open flame or hot surfaces. Should be 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 / PERSONNAL PROTECTION

Engineering Controls:

Use local exhaust at all process locations where vapor or mist may be emitted. Ventilate all transport vehicles prior to unloading.

Eyes and Face:

For splash, mist or spray exposure, wear chemical protective goggles or face shield.

Respiratory:

For splash, mist or spray exposure wear, as a minimum, a properly fitted air-purifying respirator with an organic vapor cartridge or canister with any R, P or HE pre filter (approved by U.S. NIOSHA/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

Protective Clothing:

Depending upon concentration 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 house hold 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.

Comments:

Personal protective recommendations for mixing or applying this product are prescribed on the product label. Information stated above provides useful, additional guidance for individuals whose handling of this product is not guided by the product label.

9. PHYSICAL AND CHEMICAL PROPERTIES

Assay "**Bifenthrin**" 25 ± 4 g/L

10. STABILITY AND REACTIVITY

Stability : Stable.

Conditions to avoid : Excessive heat and fire.

Polymerization : Will not occur

11. TOXICOLOGICAL INFORMATION

Technical Bifenthrin:

Acute oral LD_{50} for rat	54.5 mg/kg
Acute dermal LD_{50} for rabbits	> 2,000 mg/Kg
Inhalation LC_{50}	11.58 mg/L/1 hr (rat)

Acute Effects from over Exposure:

This product has moderate inhalation, and low oral and dermal toxicity. It is practically non-irritating to the eyes and non-irritating to the skin. 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:

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.

Carcinogenicity:

IARC : Not listed

NTP : Not Listed

OSHA : Not Listed

Other : Not Listed (ACGIH)

12. ECOLOGICAL INFORMATION

Environmental Data:

In soil, bifenthrin is stable over a wide pH range and degrades at a slow rate whichis governed by soil charecteristics. Bifentrhin 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 littile potential for movment into ground water. There is the potential for bifenthrin to bioconcentrate (BCF = 11, 750).

Ecotoxicological Information:

Bifenthrin 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. (LD_{50} values range from 1,800 mg/Kg to >2,150 mg/Kg)

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 ≥23°C (Bifenthrin)	
UN. No:	**UN 3351**	
Hazard Class:	**6.1**	
Classification Code:	TF2	
Packing group:	**III**	
Subsidiary Risks:	6.1 +3	
Special provisions:	61	
Limited quantities:	LQ19	
Packaging:	Packing instructions	P001 IBC03 R001
	Special packing provisions	-
	Mixed Packaging Provisions	MP15
	Instructions	T7
UN Portable tanks:	Special Provisions	TP2 TP28
	Tank Code	L4BH
ADR Tank:	Special Provision	TU15 TE1 TE15 TE19
	Vehicle for tank carriage	FL
	Transport Category	2
Special provision carriage:	Packages	-
	Bulk	-
	Loading, unloading & Handling	CV13 CV28
	Operation	S2 S9
Hazard Identification		**63**

15. REGULATORY INFORMATION.

SARA, Title III (Superfund Amendments and Reauthorization Act)

Section 302 Extremely Hazardous substances (40 CFR 355): not listed

Section 311 Hazard Categories (40 CFR 370) immediate, delayed.

Section 312 Threshold Planning Quantity (40 CFR 370):

The threshold planning quantity (TPQ) for this product, if treated as a mixture is 10,000 lbs. this product contains the following ingredients with a TPQ of les than 10,000 lbs: None.

Section 313 Reportable ingredients (40 CFR 372): This product contains the following ingredients subject to section 313 reporting requirements: (bifenthrin)

Comments: Australian Hazard Code: 3XE

U.S. EPA Signal Word: **Caution**.

16. OTHER INFORMATION

Buyer assumes all responsibility for safety and use not in accordance with the product label instructions.