



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name : **Bifenthrin Technical**

Common Name : Bifenthrin

IUPAC Name : 2-methylbiphenyl-3-ylmethyl (Z)-(1*RS*,3*RS*)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate

Chemical Abstracts Name : (2-methyl[1,1'-biphenyl]-3-yl)methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate

CAS No. : 82657-04-3

Chemical formula : $C_{23}H_{22}ClF_3O_2$

Molecular weight : 422.9

Chemical Family : Pyrethroid

Use : Insecticide, acaricide

Company Name : HPM Chemicals & Fertilizers Ltd.

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2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Content % (w/w)
Bifenthrin Technical	82657-04-3	92.00
Others		08.00



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3. HAZARDS IDENTIFICATION

- Health Hazards** : Synthetic pyrethroids can produce paresthesias. Typically symptoms begin several hours after cutaneous exposure, peaks within about 12 hours and resolves within about 12 hours. Extraordinary absorbed doses may rarely cause tremor, hyper-excitability, uncoordinated movements, salivation, nausea and vomiting & diarrhea.
- Emergency** : Warning! Keep out of reach of children. Toxic if swallowed and by inhalation.
- Skin and Eyes** : Avoid contact with skin and eyes.
- Entry route** : Ingestion, Inhalation, Contact with eye or skin.
- Symptoms of poisoning** : Paraesthesia, particularly involving the face, dizziness, headache, nausea, anorexia and fatigue. Less common findings included chest tightness, palpitations, blurred vision, increased sweating and low-grade fever.

4. FIRST AID MEASURES

- Ingestion** : DO NOT induce vomiting. Rinse any residual product from mouth and lips. Give water to drink and seek medical advice.
- Eye** : Immediately flush eyes with running water until product is removed. Seek medical advice if irritation persists.
- Skin** : Remove contaminated clothing. Wash thoroughly under running water using a mild soap to remove all products. Seek medical advice if irritation, reddening and/or other damage occurs.
- Inhalation** : Remove victim from exposure. Keep at rest until fully recovered. Seek medical advice if effects persist.
- Advice to Physician** : No specific Antidote. Treat symptomatically.



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5. FIRE FIGHTING MEASURES

- Specific Hazard** : There is no risk of an explosion from this product under normal circumstances if involved in a fire.
- Extinguishing Media** : Extinguish fire using media suited to burning material. If containers are ruptured contain all runoff. CO₂, Foam or dry chemical are preferred. Soft stream water fog or fine water sprays if no alternatives. Contain all runoff.
- Hazard From Combustion products** : If involved in a fire, it will emit toxic and noxious fumes of oxides of carbon, nitrogen or sulfur. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if risk to of exposure to vapour or smoke.
- Protective equipment** : Wear full protective clothing and self-contained breathing apparatus. Do not breathe or contact smoke, gases or vapours generated.

6. ACCIDENTAL RELEASE MEASURES

- In Case of Emergency** : Isolate and post spill area. Wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves and eye/face protection to prevent skin and eyes being affected. Evacuate unprotected and unnecessary personnel from area of spill. If material is leaking from a container, stop the leak only if this can be done safely. Prevent spillage entering drains or watercourses. Contain spill and absorb spilled material with absorbent material such as sand, clay or cat litter and dispose of waste as per regulations.
- Clean up Procedures** : To decontaminate spill area, tools and equipment, wash with detergent and water and add the solution to the drums of wastes already collected and label contents. Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.



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7. HANDLING AND STORAGE

- Handling** : Ensure containers are kept closed until using product. Avoid contact with eyes and skin. Wear cotton overalls buttoned to the neck and wrist, washable hat and elbow-length PVC gloves.
- Storage** : 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 room or place away from children, animals, food, feed stuffs, seed and fertilizers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering Controls** : Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.
- Ingestion** : DO NOT eat, drink or apply cosmetics, where there is a potential for exposure to the product.
- Eye Protection** : Safety goggles, chemical splash goggles or face shield for eyes protection should be used. Safety showers and eye wash should be easily available.
- Skin Protection** : Chemical resistant gloves, coveralls socks, apron and chemical resistant foot covering should always be used while handling the product.
- Respiratory protection** : Always use NIOSH/MSHA approved respiratory protection equipment with a universal filter type including particle filter.
- General Protection** : Avoid contact with eyes and skin. While handling the product wear cotton overalls buttoned to the neck and wrist. Elbow-length PVC gloves and face shield. After use and before eating, drinking and smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and contaminated clothing.



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9. PHYSICAL AND CHEMICAL PROPERTIES

Colour	: Pale to tan
Odour	: Very faint slightly sweet
Physical state	: Viscous liquid; crystalline or waxy solid
Melting Point	: 68 – 70.6 °C
K_{ow} logP	: >6
Solubility	: In water <1 µg/l. soluble in acetone, chloroform, dichloromethane, diethyl ether, and toluene. Slightly soluble in heptanes and methanol.

10. STABILITY AND REACTIVITY

Chemical Stability	: Stable under normal conditions.
Conditions to Avoid	: Avoid direct sunlight.
Incompatible Materials	: Strong oxidizing agents, bases, chlorates, nitrates.
Hazardous decomposition products	: When heated to decompose it emits toxic fumes of bromide ion, cyanide ion, nitrogen oxides. Hazardous Decomposition Products: Carbon monoxide.
Hazardous Reactions	: No polymerization will occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD₅₀	: 54.5 mg/kg body weight (Rat)
Acute Dermal LD₅₀	: >2000 mg/kg body weight (Rabbit)
Acute Inhalation LC₅₀	: 0.8 mg/l (4 h) (rat)
Skin Irritation	: Non Irritant (Rabbit)
Eye Irritation	: Virtually non- irritating to eyes (Rabbit)
Skin Sensitization	: Not a skin sensitizer (Guinea pig)

12. ECOLOGICAL INFORMATION

Bird	: Acute oral LD ₅₀ for mallard ducks 2150 mg/kg
Fish	: LC ₅₀ (96 h) for rainbow trout 0.00015 mg/l

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Daphnia : LC₅₀ (48 h) 0.00016 mg/l
Bees : LD₅₀ (oral) 0.1 µg/bee
LD₅₀ (contact) 0.01462 µg/bee

13. DISPOSAL CONSIDERATIONS

Disposal : This material must be disposed of as a Hazardous Waste. Disposal should be in accordance with local, nation or state rule and regulations.

Disposal of empty Containers : Break, crush, or puncture and deliver empty packaging for appropriate disposal to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product.

14. TRANSPORT INFORMATION

Shipping Name : Pyrethroid Pesticide, Toxic, liquid (Bifenthrin)
UN No. : 3352
Class : 6.1
Packing group : III
Marine pollutant : Yes

15. REGULATORY INFORMATION

Hazard symbol



Dangerous for the environment (N)



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Risk Phrase **R 23/25:** toxic by inhalation and if swallowed.
 R 51/53: Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
 R 57: Toxic to bees.

Safety phrase **S 1/2:** Keep locked up and out of reach of children.
 S 26: In case of contact with eyes rinse immediately with plenty of water and seek medical advice.
 S 35: The material and its container must be disposed-off in a safe way.

16. OTHER INFORMATION

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are resented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS. Accordingly, no guarantee or warrantee expressed or implied is made by HPM Chemicals & Fertilizers Ltd., as to the results to be obtained based upon the user's use of the information, nor does HPM Chemicals & Fertilizers Ltd., assume any liability arising out of user's use of the information.

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