

Material Safety Data Sheet

Bifenazate 25%+ Etoxazole 15%SC

1. PRODUCT IDENTIFICATION

Product Name: Bifenazate 25%+ Etoxazole 15%SC
 Common Name: Bifenazate; Etoxazole
 Chemical Family: Hydrazine ester (Bifenazate);
 Mite growth inhibitor (Etoxazole)
 Chemical Formula: C₁₇H₂₀N₂O₃ (Bifenazate);
 C₂₁H₂₃F₂NO₂ (Etoxazole);
 Chemical Name: isopropyl 3-(4-methoxybiphenyl-3-yl)carbazate (Bifenazate);
 (RS)-5-tert-butyl-2-[2-(2,6-difluorophenyl)-4,5-dihydro-1,3-oxa
 zol-4-yl]phenetole (Etoxazole);
 CAS No.: 149877-41-8 (Bifenazate);
 153233-91-1 (Etoxazole);
 Product Use: Insecticide

2. COMPANY IDENTIFICATION:

Exporter:

CHICO CROP SCIENCE CO., LTD.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient Name</u>	<u>CAS Registry Number</u>	<u>Typical Wt. % w/w</u>
Bifenazate	149877-41-8	25%
Etoxazole	153233-91-1	15%
Inert	-	to 100 %

4. HAZARDS IDENTIFICATION

Emergency Overview

Off-white suspension liquid.

CAUTION!

KEEP OUT OF REACH OF CHILDREN

MAY CAUSE EYE AND SKIN IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION.

5. FIRST AID MEASURES

If swallowed: Rinse mouth immediately and then drink plenty of water, seek

medical attention. Do not induce vomiting unless told to by a poison control center or doctor. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. The patient should be sent to the hospital for symptomatic treatment with this label immediately.

If in eye: Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If on skin: Wash thoroughly with soap and water. If irritation develops, seek medical attention.

If Inhaled: Keep patient calm, remove to fresh air, and seek medical attention.

Notes to Physician: No special antidotes. Treat them according to their symptoms.

6. FIRE FIGHTING MEASURES

Fire and explosive Properties

Auto-Ignition Temperature	Not available
Flash Point	Not applicable

Extinguishing Media

Water fog, Carbon Dioxide, Dry Chemical, Foam.

Fire Fighting Instructions

The product is not flammable. But if firing, fire fighters and others who may be exposed to products of combustion should wear full firefighting turn out gear and self-contained breathing apparatus. Firefighting equipment should be thoroughly decontaminated after use. Person who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

7. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Stop the leak, if possible. Ventilate the space involved. Absorb, sweep up, place in container for disposal. Shut off or remove all ignition sources. Prevent waterway contamination. Construct a dike to prevent spreading. Protect works with water spray. Collect run-off water and transfer to drums or tanks for later disposal.

8. HANDLING AND STORAGE

Handling

Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye irritation. Do not breathe gas or allow to get in eyes, on skin, or on clothing. Wash hands, arm and face

thoroughly with soap and warm water after use and before eating or smoking. Wash all contaminated clothing with soap and hot water before reuse. Do not contaminate feed or food items. Keep out of reach of children.

Storage

Store in a cool, dry, ventilated, rain-proof place. Keep container sealed. Keep away from fire and heat. Keep out of the reach of children and unrelated persons and locked. The storage area shall be provided with suitable materials for leakage.

9. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye/Face Protection

Goggles and full-face shield should be used when needed to prevent liquid from face and getting into the eyes.

Skin Protection

Avoid skin contact. Use chemical-resistant gloves, and wear long sleeves and trousers to prevent dermal exposure.

Respiratory Protection

Under normal handling conditions no respiratory protection is needed. However, if needed to prevent respiratory irritation, either a respirator approved for dusts and mists, or one approved for pesticides

10. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Off-white
Physical state:	suspension liquid
Odor:	no characteristic odor
pH:	4.0-8.0 (formulation)
Melting point	123–125°C (pure a.i.) (Bifenazate); 101–102°C (Etoxazole)
Boiling point:	Decomposes at 240 °C(Bifenazate) N/A(Etoxazole)
Vapor pressure:	3.8×10^{-4} mPa (25 °C) 7.0×10^{-3} mPa (25 °C). (Etoxazole)
Solubility in water:	In water 2.06 mg/l (unspecified pH, 20°C). (Bifenazate) In water 75.4 µg/l (20 °C). (Etoxazole)
Solubility in organic solvents:	In acetonitrile 95.6, ethyl acetate 102, methanol 44.7, toluene 24.7, hexane 0.232 (all in g/l). (Bifenazate) In acetone 300, methanol 90, ethanol 90, cyclohexanone 500, tetrahydrofuran 750, acetonitrile 80, ethyl acetate 250, xylene 250, n-hexane 13, n-heptane 13 (all in g/l, 20 °C).

Partition coefficient: (Etoxazole)
 $K_{ow} \log P = 3.4$ (40 °C, pH 7). (Bifenazate)
 $K_{ow} \log P = 5.59$ (25 °C) (Etoxazole)

11. STABILITY AND REACTIVITY

Stability

Stable for >1 y at 20 °C and 50% r.h. DT₅₀ (hydrolysis) 9.10 (pH 4), 5.4 (pH 5), 0.8 (pH 7), 0.08 (pH 9) (all in d, 25 °C); DT₅₀ (photolysis) 17 h (25 °C, pH 5). (Bifenazate)
 DT₅₀ 9.6 d (pH 5), c. 150 d (pH 7), c. 190 d (pH 9) (all 20 °C) (*EU Review Reports*). No decomposition after 30 d (50 °C). (Etoxazole)

Hazardous Polymerization

Does not occur.

Incompatibility

This product is not compatible with strong acids, strong oxidizing agents.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen fluoride.

12. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀: Acute oral LD₅₀ for rats >5000 mg/kg. (Bifenazate)
 Acute oral LD₅₀ for male and female rats and mice >5000 mg/kg. (Etoxazole)

Acute dermal LD₅₀: Acute dermal LD₅₀ for rats >5000 mg/kg. (Bifenazate)
 Acute percutaneous LD₅₀ for male and female rats >2000 mg/kg. (Etoxazole)

Acute inhalation LC₅₀: LC₅₀ for rats >4.4 mg/l. (Bifenazate)
 LC₅₀ for male and female rats >1.09 mg/l. (Etoxazole)

Irritation: Very slight skin irritation; slight eye irritation (rabbits).
 Not classified as a skin or eye irritant according to EPA or EU criteria. (Bifenazate)
 No skin or eye irritation (rabbits). (Etoxazole)

Sensitization: Not a guinea pig skin sensitizer (Buehler); is a skin sensitizer (Magnusson & Kligman). (Bifenazate)
 Not a skin sensitizer (guinea pigs). (Etoxazole)

Long-term Studies: Negative in Ames test, not mutagenic, not teratogenic in rats and rabbits. Not carcinogenic to rats and mice. (Bifenazate)
 Negative in Ames test. (Etoxazole)

13. ECOTOXICOLOGICAL INFORMATION

The data is from studies conducted on the technical material.

Toxicity to bees:

LD₅₀ (48 h, oral) >100 µg/bee; (contact) 8.5 µg/bee. (Bifenazate)

LD₅₀ (oral and contact) >200 µg/bee. (Etoxazole)

Toxicity to fish and other aquatic organisms:

LC₅₀ (96 h) for bluegill sunfish 0.58, rainbow trout 0.76 mg/l. EC₅₀ (96 h) for eastern oysters 0.42 mg/l (EU Rev. Rep.). (Bifenazate)

LC₅₀ for bluegill sunfish 1.4 mg/l (EU Rev. Rep.). LC₅₀ (96 h) for Japanese carp 0.89 mg/l; (48 h) for Japanese carp >20, rainbow trout >40 ppm. Disruption of moulting was observed in aquatic arthropods. (Etoxazole)

Toxicity to birds:

Acute oral LD₅₀ for bobwhite quail 1142 mg/kg. Dietary LC₅₀ (5 d) for bobwhite quail 2298, mallard ducks 726 mg/kg diet. (Bifenazate)

Acute oral LD₅₀ for mallard ducks >2000 mg/kg. Sub-acute oral LD₅₀ (5 d) for bobwhite quail >5200 ppm diet. (Etoxazole)

Toxicity to earthworms and soil microorganisms:

Worms LC₅₀ (14 d) >1250 mg/kg. (Bifenazate)

NOEL (14 d) for Eisenia foetida >1000 ppm. (Etoxazole)

Toxicity to daphnia:

EC₅₀ (48 h) 0.50 mg/l. (Bifenazate)

LC₅₀ (3 h) >40 ppm. (Etoxazole)

Toxicity to algae:

EbC₅₀ (72 h) for Skeletonema costatum 0.30 mg/l (EU Rev. Rep.); ErC₅₀ (96 h) for Selenastrum capricornutum 0.90 mg/l. (Bifenazate)

EC₅₀ for Selenastrum capricornutum >1.0 mg/l. (Etoxazole)

Chemical Fate Information

The data is from studies conducted on the technical material.

Animals:

In animals, the product is considered to be of poor bioavailability, and most of the dose is excreted in the faeces. Absorption is dose dependent (80–85% at 10 mg/kg, 22–29% at 1000 mg/kg). The absorbed dose undergoes oxidation to the corresponding azo compound, and hydroxylation; hydroxylated metabolites appear in the urine as sulfate or glucuronide conjugates. (Bifenazate)

About 60% of the administered dose was absorbed within 48 h, and almost completely eliminated, mostly via faeces, within 7 d. Extensively metabolized, principally by hydroxylation of the 4,5-dihydrooxazole ring, followed by cleavage of the molecule and hydroxylation of the tert-butyl side-chain (based on EU Rev. Rep.). (Etoxazole)

Plants:

Considered to be non-systemic; most residues stay on the surface and peel of the crops, where it is mostly not metabolised. Traces that penetrated the peel were metabolised as for animals. (Bifenazate)

N/A. (Etoxazole)

Soli/Environment:

DT₅₀ in aerobic soil c. 7 h; DT₅₀ (anaerobic) c. <1 d. Neither bifenazate nor its degradation products leached in a variety of soil types; K_{oc} (by hplc) 1778. DT₅₀ in natural water 45 min; DT₅₀ for field dissipation ≤5 d. (Bifenazate)

In Japanese alluvial soil, DT₅₀ 19 d, DT₉₀ 90 d. K_{oc} >5000. K_f 66–131, K_{foC} 4910–11000 (mean 6650) for 4 soils (o.c. 0.6–2.4%, pH 4.3–7.4) (EU Rev. Rep.) (Etoxazole)

14. DISPOSAL CONSIDERATIONS

Waste Disposal

For the packaging container, completely remove the residual agent from the material in the barrel. Landfill or incineration can be used if local authorities permit. Do not reuse empty containers. The residue should be disposed of in strict accordance with the label requirements.

15. TRANSPORT INFORMATION

UN Number: UN 3082

Dangerous Goods Class: 6.1

Packing Group: III

16. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

17. OTHER INFORMATION

The information contained herein relates only to the specific material identified. We believe that such information is accurate and reliable as of the date of this material safety data sheet, but no representation, guarantee or warranty, express or implied, is made as to the reliability or completeness of the information. Urge persons receiving this information to make their own determination as to the information's suitability and completeness for their particular application.

Chico Crop Science Co., Ltd.