

EXPERIMENTAL SAFETY DATA SHEET**1. Company and Product Identification**

FMC CORPORATION 701 PrincetonSouth Corporate Center Ewing, N.J. 08628	<u>Active Ingredient</u> <u>Chemical Family</u> <u>Formula</u> <u>Synonyms</u>	: Bifenthrin; Clothianidin : pyrethroid; neonicotinoid : C23H22ClF3O2; C6H8ClN5O2S : Bifenthrin: Common name bifenthrin (BSI, ANSI, E-ISO); bifenthrine ((f) F-ISO) IUPAC name 2-methylbiphenyl-3-ylmethyl (Z)-(1RS,3RS)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate Roth: 2-methylbiphenyl-3-ylmethyl (Z)-(1RS)-cis-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 Clothianidin: Common name clothianidine ((f) F-ISO); clothianidin (BSI, E-ISO) IUPAC name (E)-1-(2-chloro-1,3-thiazol-5-ylmethyl)-3-methyl-2-nitroguanidine Chemical Abstracts name (E)-N-[(2-chloro-5-thiazolyl)methyl]-N'-methyl-N''-nitroguanidine
-----------------------------------------------------------------------------	-----------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

EMERGENCY TELEPHONE NUMBERS (24 hour monitoring):Medical Emergencies:

PROSAR on behalf of FMC Agricultural Products Group
(800) 331-3148 (U.S.A. & Canada)
+001 (651) 632-6793 (All Other Countries - Collect)

For leak, fire, spill or accident emergencies:

CHEMTREC on behalf of FMC Agricultural Products Group
+1 800.424.9300 (U.S.A.)
+001 703.527.3887 (Collect - All Other Countries)

2a. Precautionary Statement**The chemicals described are for Experimental Use Only.**

The chemical, physical, and toxicological properties of this compound have not been investigated fully and its handling or use may be hazardous. This compound must be used by (or directly under the supervision of) technically qualified individuals. Exercise due care. Read the Experimental Safety Data Sheet carefully. Follow the directions for use and observe all warnings and precautionary statements thereon. FMC makes no warranty, expressed or implied, with respect to this compound, and does not warrant that this compound is merchantable or fit for any particular purpose. Contractors of FMC assume all risk of use, application, storage, and disposal.

2b. Proprietary Statement

Nothing contained herein should be construed as a recommendation or inducement to infringe any valid, enforceable patent of another.

Field tests use compounds, formulations, and processes which are proprietary to FMC and which may be the subject of patents or patent applications of FMC. No right or license to use or disclose FMC proprietary information is granted or implied by participation in a test beyond that authorized by the test protocol.

3. Composition/Information on Ingredients

<u>Ingredient Name</u>	<u>CAS #</u>	<u>EU Class (Not for US)</u>
Bifenthrin Technical (8.0%)	82657-04-3	T, N, R25; R50/53
Clothianidin Technical (10.00%)	210880-92-5	-----
Smectite Clay (0.35%)	12199-37-0	-----
Other (81.65%)	-----	-----

4. First Aid Measures

- Eyes** : Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist immediately.
- Skin** : Immediately flush with plenty of water while removing contaminated clothing and/or shoes, and thoroughly wash with soap and water. See a medical doctor immediately.
- Inhalation** : Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.
- Ingestion** : Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. See a medical doctor.

5. Fire Fighting Measures

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

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 (see Section 9, "Physical and Chemical Properties" below).

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 : None known

6. Accidental Release Measures

Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8. Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean and neutralize spill area, tools and equipment by washing with bleach, water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13. For further clean-up instructions Call FMC Emergency Hotline number listed in Section 1 "Company and Product Identification" above.

7. Handling and Storage

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 materials, or allow this material to be contaminated, by improper storage or handling.

8. Exposure Controls/Personal Protection

Engineering Controls	:	Use local exhaust at all process locations where splash, spray, mist or dust may be emitted. Ventilate all transport vehicles prior to unloading.
Work Clothing	:	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 rain suit.
Eye & Face Protection	:	Wear chemical protective goggles or a face shield.
Respiratory	:	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.
Gloves	:	Wear chemical resistant gloves. 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

Appearance	:	white liquid	Flash Point	:	> 38°C
Odor	:	mild technical odor	Specific Gravity	:	1.07
pH	:	4.8	Molecular Weight	:	Not available
Solubility (H₂O)	:	suspension	Wt/Vol.	:	168.2 lbs/gal

10. Stability and Reactivity

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

11. Toxicological Information

This product is being shipped for the purpose of testing since there are no data on the compound. However, this compound is expected to share similar toxicological properties to F9252-2. Therefore the acute toxicology data presented below are based on F9252-2.

Acute Oral LD50	:	< 700 mg/kg (rat)	Eye Effect	:	Minimally irritating (rabbit)
Acute Dermal LD50	:	> 2000 mg/kg (rat)	Skin Effect	:	Minimally irritating (rabbit)
Inhalation LC50	:	No data available	Skin Sensitization	:	No data available

Acute Toxicity: No data are available for this formulation. This material is expected to have moderate oral and inhalation toxicity and low dermal toxicity. It is expected to be minimally irritating to the eyes and 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 Toxicity: No data are available for this 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.

Smectite Clay

Inhalation of high concentrations may cause mechanical irritation and discomfort.

Carcinogenicity: No components listed.

12. Environmental Information

No data are available for this formulated compound. The data presented below are for the active ingredients, bifenthrin and clothianidin.

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 Pow (>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 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 (LD50 values range from 1,800 mg/kg to >2,150 mg/kg).

Clothianidin: Acute toxicity to mammals: LD50(mice) =389mg/kg bw
Acute toxicity to birds: LD50(Japanese quail) = 430mg/kg bw
Dietary toxicity to birds: LC50 (mallard duck)>752mg/kg bw
Reproductive toxicity to birds: NOEC (bowwhite quail) =56.8mg/kg bw

13. Disposal Considerations

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: Completely empty package into application equipment then dispose of empty package in accordance with all Federal, State and local regulations. If burned, stay out of smoke.

14. Transport Information

Based on the active ingredients:

Environmentally hazardous substance, liquid, n.o.s.
(bifenthrin, clothianidin)
9 UN3082 PGIII

15. Hazard, Risk And Safety Phrase Descriptions

T (Toxic)
N (Dangerous for the environment)
R25 (Toxic if swallowed.)
R50/53 (Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.)