

MATERIAL SAFETY DATA SHEET

TalstarOne™ Multi-Insecticide



MSDS Ref. No.: 82657-04-3-116

Date Approved: 01/19/2005

Revision No.: 6

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the EC directive, 2001/58/EC and other regulatory requirements. The information contained herein is for the concentrate as packaged, unless otherwise noted.

1. PRODUCT AND COMPANY IDENTIFICATION

| | |
|------------------------------|---|
| PRODUCT NAME: | TalstarOne™ Multi-Insecticide |
| PRODUCT CODE: | 6217 |
| ACTIVE INGREDIENT(S): | Bifenthrin |
| CHEMICAL FAMILY: | Pyrethroid Pesticide |
| MOLECULAR FORMULA: | C ₂₃ H ₂₂ ClF ₃ O ₂ (bifenthrin) |
| SYNONYMS: | FMC 54800; (2-methyl[1,1'-biphenyl]-3-yl)methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate; IUPAC: 2-methylbiphenyl-3-ylmethyl (Z)-(1RS)-cis-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate |

U.S. EPA REGISTRATION NUMBER: 279-3206

MANUFACTURER

FMC CORPORATION
Agricultural Products Group
1735 Market Street
Philadelphia, PA 19103
(800) 321-1362 (General Information)

EMERGENCY TELEPHONE NUMBERS

(800) 424-9300 (CHEMTREC - U.S.A. & Canada)
(703) 527-3887 (CHEMTREC - All Other Countries)
(800) 331-3148 (FMC - U.S.A. & Canada)
(716) 735-3765 (FMC - Reverse charges)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

- Beige liquid with a bland 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.

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.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Name | CAS# | Wt. % | EC No. | EC Class |
|------------------|------------|-------|-----------|-----------------------|
| Bifenthrin | 82657-04-3 | 7.9 | None | R25-50/53; S1/2-45-29 |
| Propylene Glycol | 57-55-6 | <6.2 | 200-338-0 | Not classified |

4. FIRST AID MEASURES

EYES: 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. 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 low oral, dermal and inhalation toxicity. It is practically non-irritating to the eyes and is 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

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

FIRE / EXPLOSION HAZARDS: Slightly combustible. This material may support combustion at elevated temperatures.

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

6. ACCIDENTAL 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 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. Dispose of drummed waste according to the method outlined in Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

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 pesticides, fertilizers, water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

| Chemical Name | ACGIH | OSHA | Supplier |
|------------------|-------|-------------------------------|----------|
| Propylene Glycol | | 10.0 mg/m ³ (WEEL) | |

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

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: For splash, mist or spray exposure, wear chemical protective goggles or a face shield.

RESPIRATORY: For splash, mist or spray exposure wear, as a minimum, a properly fitted air-purifying respirator with an organic vapor cartridge (OV) or canister with any R, P or HE prefilter (approved by 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).

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.

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.

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 use or handling of this product is not guided by the product label.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-------------------------------------|---------------------------|
| ODOR: | Bland |
| APPEARANCE: | Beige liquid |
| DENSITY / WEIGHT PER VOLUME: | 8.53 lb/gal. (1024 g/L) |
| FLASH POINT: | > 100 °C (> 212 °F) (TCC) |
| MOLECULAR WEIGHT: | 422.88 (bifenthrin) |
| pH: | 6.7 |
| SOLUBILITY IN WATER: | Disperses |
| SPECIFIC GRAVITY: | 1.024 @ 20°C (water =1) |

10. STABILITY AND REACTIVITY

| | |
|--|---|
| CONDITIONS TO AVOID: | Excessive heat and fire. |
| STABILITY: | Stable |
| POLYMERIZATION: | Will not occur |
| HAZARDOUS DECOMPOSITION PRODUCTS: | Carbon monoxide, carbon dioxide, chlorine, fluorine, hydrogen chloride and hydrogen fluoride. |

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Practically non-irritating

SKIN EFFECTS: Non-irritating

DERMAL LD₅₀: > 2,000 mg/kg (rabbit)

ORAL LD₅₀: 632 mg/kg (rat)

INHALATION LC₅₀: 11.58 mg/l (1 h) (rat)

ACUTE EFFECTS FROM OVEREXPOSURE: This product has low oral, dermal and inhalation toxicity. It is practically non-irritating to the eyes and is 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. In humans, ingestion of large amounts of propylene glycol has resulted in symptoms of reversible central nervous system depression including stupor, rapid breathing and heartbeat, profuse sweating and seizures.

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. Repeated overexposure to propylene glycol can produce central nervous system depression, hemolysis and minimal kidney damage.

CARCINOGENICITY:

| | |
|---------------|--------------------|
| NTP: | Not listed |
| IARC: | Not listed |
| OSHA: | Not listed |
| OTHER: | Not Listed (ACGIH) |

12. ECOLOGICAL INFORMATION

Unless otherwise indicated, the data presented below are for the active ingredient.

ENVIRONMENTAL DATA: In soil, bifenthrin is stable over a wide pH range and degrades at a slow rate that is governed by soil characteristics. Bifenthrin 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 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 waterfowl and upland game birds (LD₅₀ values range from 1,800 mg/kg to >2,150 mg/kg).

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: Non-returnable containers that 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

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

| | |
|---|---|
| PACKAGING TYPE: | Non-Bulk |
| ADDITIONAL INFORMATION: | This product is not subject to the Hazardous Materials Regulations when in non-bulk packages. |
| PACKAGING TYPE: | Bulk |
| PROPER SHIPPING NAME: | Environmentally hazardous substance, liquid, n.o.s. |
| TECHNICAL NAME(S): | Bifenthrin |
| PRIMARY HAZARD CLASS / DIVISION: | 9 |
| UN/NA NUMBER: | UN 3082 |
| PACKING GROUP: | II |
| MARINE POLLUTANT: | Bifenthrin |
| LABEL(S): | 9 |
| PLACARD(S): | 9 |
| MARKING(S): | 3082 |

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

| | |
|---|---|
| PACKAGING TYPE: | Non-Bulk |
| PROPER SHIPPING NAME: | Environmentally hazardous substance, liquid, n.o.s. |
| TECHNICAL NAME(S): | Bifenthrin |
| PRIMARY HAZARD CLASS / DIVISION: | 9 |
| UN/NA NUMBER: | UN 3082 |
| PACKING GROUP: | III |
| MARINE POLLUTANT: | Bifenthrin |
| LABEL(S): | 9 |
| PLACARD(S): | 9 |
| MARKING(S): | Environmentally hazardous substance, liquid, n.o.s. (bifenthrin), UN3082 + Marine Pollutant |
| ADDITIONAL INFORMATION: | EmS Number: F-A, S-F |
| ADDITIONAL INFORMATION: | Flash Point: >100°C |

**ADR - EUROPEAN AGREEMENT CONCERNING THE
INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD**

| | |
|---|--|
| PACKAGING TYPE: | Non-Bulk |
| PROPER SHIPPING NAME: | Environmentally hazardous substance, liquid, n.o.s. |
| TECHNICAL NAME(S): | Bifenthrin |
| PRIMARY HAZARD CLASS / DIVISION: | 9 |
| CLASSIFICATION CODE: | M6 |
| UN/NA NUMBER: | UN3082 |
| PACKING GROUP: | III |
| HAZARD IDENTIFICATION NUMBER: | 90 |
| MARINE POLLUTANT: | Bifenthrin |
| LABEL(S): | 9 |
| PLACARD(S): | 9 |
| MARKING(S): | 9, 3082 |
| ADDITIONAL INFORMATION: | Notes: Marks in compliance with IMDG Code are accepted. |

**INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) /
INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)**

| | |
|--------------------------------|--|
| PACKAGING TYPE: | Non-Bulk |
| ADDITIONAL INFORMATION: | This product is not subject to regulation when shipped via air. |

OTHER INFORMATION:
HARMONIZED SYSTEM NUMBERS:
Import to the U.S.A.: 3808.10.2500
Export from the U.S.A.: 3808.10.0000

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355, APPENDIX A):

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; however, this product contains the following ingredients with a TPQ of less 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

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA DESIGNATION & REPORTABLE QUANTITIES (RQ) (40 CFR 302.4):

Not listed

FEDERAL INSECTICIDE FUNGICIDE RODENTICIDE ACT

U.S. EPA Signal Word: CAUTION

INTERNATIONAL LISTINGS

Australian Hazard Code: 3XE

HAZARD, RISK AND SAFETY PHRASE DESCRIPTIONS:

Bifenthrin:

EC Symbols: T (Toxic)
 N (Dangerous for the environment)

| | | |
|--------------------|--------|---|
| EC Risk Phrases: | R25 | (Toxic if swallowed.) |
| | R50/53 | (Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.) |
| EC Safety Phrases: | S1/2 | (Keep locked up and out of reach of children.) |
| | S45 | (In case of accident or if you feel unwell, seek medical advice immediately - show the label where possible.) |
| | S29 | (Do not empty into drains.) |

Notes For Preparation:

CLASSIFICATION: Mandatory labeling (self-classification) of hazardous substances: applicable

16. OTHER INFORMATION

REVISION SUMMARY:

This MSDS replaces Revision #5, dated November 18, 2004.

Changes in information are as follows:

Section 1 (Product and Company Identification)

Section 16 (Other Information)

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