

Material Safety Data Sheet

Triple Crown™ T&O Insecticide

MSDS #: 6720-1-A

Revision Date: 2013-10-15
Version 1.02



This MSDS has been prepared to meet U.S. OSHA Hazard Communication Standard 29 CFR 1910.1200
And Canadian Workplace Hazardous Materials Information System (WHMIS) requirements.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	Triple Crown™ T&O Insecticide
Active Ingredient(s)	Bifenthrin, Zeta-cypermethrin, Imidacloprid
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; FMC 233570; (+/-)- α -cyano(3-phenoxyphenyl)methyl (+/-) cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate; IUPAC: (RS)- α -cyano-3-phenoxybenzyl (1RS)-cis-trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate; 1-(6-chloro-3-pyridylmethyl)-N-nitroimidazolidin-2-ylideneamine
Chemical Family	Pyrethroid Pesticide, Neonicotinoid
Recommended use:	Insecticide
<u>Manufacturer</u>	<u>Emergency telephone number</u>
FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-Mail: msdsinfo@fmc.com	Medical Emergencies: 1 800 / 331-3148 (PROSAR - U.S.A. & Canada) 1 651 / 632-6793 (PROSAR - All Other Countries - Collect) For leak, fire, spill or accident emergencies, call: 1 800 / 424 9300 (CHEMTREC - U.S.A.) 1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)

2. HAZARDS IDENTIFICATION

<u>Appearance</u>	off-white liquid
<u>Physical state</u>	Liquid
<u>Odor</u>	Aromatic hydrocarbon
<u>Physical or Chemical Hazards</u>	
<u>Potential health effects</u>	
Principle Routes of Exposure	Eye contact, Skin contact, Inhalation, Ingestion.
Acute effects	
Eyes	May cause slight irritation.
Skin	Causes moderate skin irritation.
Inhalation	May cause drowsiness and dizziness.

Ingestion	Toxic if swallowed. Potential for aspiration if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause additional effects as listed under "Inhalation".
Chronic effects	Effects are expected to be similar to those that are seen with acute toxicity. Prolonged exposure may cause chronic effects.
Aggravated Medical Conditions	Thyroid disease, Liver disorders.
Environmental hazard	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous ingredients

Chemical Name	CAS-No	Weight %
Naphtha (petroleum), heavy aromatic	64742-94-5	10-20
imidacloprid	138261-41-3	13.8
Bifenthrin	82657-04-3	7.9
Propylene glycol	57-55-6	5-10
Zeta-cypermethrin (F2700)	52315-07-8	2.7

4. FIRST AID MEASURES

Eye contact	Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
Skin contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Inhalation	Move person to fresh air. If person is not breathing, call 911 (within the U.S. and Canada) or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
Ingestion	Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
Notes to physician	This product contains a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided. Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

5. FIRE-FIGHTING MEASURES

Flash Point	> 100 °C
Sensitivity to Mechanical Impact	Not applicable
Sensitivity to Static Discharge	Not applicable
Suitable extinguishing media	Foam. Carbon dioxide (CO ₂). Dry chemical. Water spray or fog.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate downwind.

NFPA

Health Hazard	2
Flammability	1
Stability	0
Special Hazards	-

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	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.
Environmental precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
Methods for containment	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	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.
Other	For further clean-up instructions call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

7. HANDLING AND STORAGE

Handling	Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.
Storage	Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Store in original container only.

8. EXPOSURE CONTROL / PERSONAL PROTECTIONExposure guidelines

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
Propylene glycol 57-55-6			TWA: 10 mg/m ³ TWA: 50 ppm TWA: 155 mg/m ³	

Occupational exposure controls

Engineering measures	Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.
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Personal Protective Equipment

General Information	If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.
Eye/face protection	Tightly fitting safety goggles
Skin and body protection	Wear long-sleeved shirt, long pants, socks, shoes, chemical-resistant gloves and headgear.
Hand protection	Protective gloves
Hygiene measures	Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

9. PHYSICAL AND CHEMICAL PROPERTIESInformation on basic physical and chemical properties

Appearance	off-white liquid
Physical state	Liquid
Odor	Aromatic hydrocarbon
pH	4.0-4.6
Melting Point/Range	No information available.
Freezing point	No information available
Boiling Point/Range	Not applicable
Flash Point	> 100 °C
Evaporation rate	Not applicable
Vapor pressure	No information available
Vapor density	No information available
Density	9.22 lb/gal
Water solubility	Miscible with water
Percent volatile	No information available
Partition coefficient:	Not applicable
Viscosity	334 cSt (mm ² /s) @ 23°C, 760 cSt (mm ² /s) @ 43°C

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Conditions to avoid	Heat, flames and sparks
Hazardous decomposition products	Carbon oxides. Hydrogen chloride. Hydrogen fluoride.
Hazardous polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute effects

Eye contact	Slightly or non-irritating (rabbit).
Skin contact	Moderately irritating to skin (rabbit)
Ingestion	May cause drowsiness and dizziness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary edema.
Inhalation	Inhalation of aromatic hydrocarbon vapors may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation.
LD50 Dermal	> 5000 mg/kg (Rat)
LD50 Oral	175 mg/kg (Rat)
LC50 Inhalation:	> 2.08 mg/L (Rat)
Sensitization	Did not cause sensitization on laboratory animals

Chronic effects

Chronic Toxicity	Effects are expected to be similar to those that are seen with acute toxicity. Prolonged exposure may cause chronic effects.
Carcinogenicity	Imidacloprid, Bifenthrin: Not carcinogenic. Cypermethrin caused an increase in benign lung tumors in mice, but not in rats, and was negative for genotoxicity. EPA has classified zeta-cypermethrin as a possible human carcinogen based on this information, but does not regulate based on its low cancer risk.
Mutagenicity	Bifenthrin, Zeta-cypermethrin: Not genotoxic.
Reproductive toxicity	Imidacloprid, Bifenthrin, Zeta-cypermethrin: No toxicity to reproduction.

Neurological Effects

Tremors were associated with chronic exposure of laboratory animals to bifenthrin, which may disappear with continued exposure. Cypermethrin did not cause neurotoxicity in animal experiments. Imidacloprid: Slight neurobehavioral effects at highest dose.

Developmental Toxicity

Bifenthrin, Zeta-cypermethrin: Not teratogenic in animal studies.

Target Organ Effects

Bifenthrin: A slight increase in male mouse urinary bladder tumors at the highest dose was probably not of toxicological concern. Imidacloprid: Thyroid, liver.

12. ECOLOGICAL INFORMATION

**Marine pollutant
Ecotoxicity**

Zeta-cypermethrin

imidacloprid (138261-41-3)				
Active Ingredient(s)	Duration	Species	Value	Units:
Imidacloprid	96 h LC50	Fish	211	mg/L
	48 h EC50	Daphnia	85	mg/L
	LD50	Bee	0.0039	µg/bee
	LD50 Oral	Bobwhite quail	152	mg/kg

Bifenthrin (82657-04-3)				
Active Ingredient(s)	Duration	Species	Value	Units:
Bifenthrin	EC50	Aquatic organisms	0.11 - 0.57	µg/L
Bifenthrin	96 h LC50	Fish	0.1 - 2.0	µg/L
Bifenthrin	LD50 Oral	Bobwhite quail	>1800	mg/kg
Bifenthrin	LD50 Oral	Mallard duck	>2150	mg/kg
Bifenthrin	LD50	Bee	0.1	µg/bee

Zeta-cypermethrin (F2700) (52315-07-8)				
Active Ingredient(s)	Duration	Species	Value	Units:
Zeta-cypermethrin	LC50	Aquatic organisms	0.005 - 0.15	µg/L
	LC50	Fish	0.07 - 2.37	µg/L
	LD50 Oral	Bobwhite quail	>2000	mg/kg
	LD50	Bee	0.0014 - 0.043	µg/bee

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Naphtha (petroleum), heavy aromatic	2.5 mg/L EC50 72 h (Skeletonema costatum)	LC50= 19 mg/L Pimephales promelas 96 h LC50= 2.34 mg/L Oncorhynchus mykiss 96 h LC50= 1740 mg/L Lepomis macrochirus 96 h LC50= 45 mg/L Pimephales promelas 96 h LC50= 41 mg/L Pimephales promelas 96 h		EC50 = 0.95 mg/L 48 h
Bifenthrin		LC50 0.0001 - 0.00019 mg/L Oncorhynchus mykiss 96 h LC50 0.0003 - 0.00038 mg/L Lepomis macrochirus 96 h		EC50 0.00135 - 0.00195 mg/L 48 h
Propylene glycol	19000 mg/L EC50 96 h (Pseudokirchneriella subcapitata)	LC50= 51600 mg/L Oncorhynchus mykiss 96 h LC50 41 - 47 mL/L Oncorhynchus mykiss 96 h LC50= 51400 mg/L Pimephales promelas 96 h LC50= 710 mg/L Pimephales promelas 96 h		EC50 > 10000 mg/L 24 h EC50 > 1000 mg/L 48 h

Environmental Fate

imidacloprid (138261-41-3)		
Active Ingredient(s)	Type of Test	Result

Imidacloprid	Half-life in soil	26-229 days
	Stability in water	30 days

Bifenthrin (82657-04-3)		
Active Ingredient(s)	Type of Test	Result
Bifenthrin	Bioconcentration factor (BCF)	1709
Bifenthrin	Half-life in soil	~85 days
Bifenthrin	log Pow	6.6
Bifenthrin	Mobility in soil	Not expected to reach groundwater
Bifenthrin	Stability in water	Stable to hydrolysis over a wide range of pH values.

Zeta-cypermethrin (F2700) (52315-07-8)		
Active Ingredient(s)	Type of Test	Result
Zeta-cypermethrin	Bioconcentration factor (BCF) Bluefill sunfish (Lepomis macrochirus)	443
	Half-life in soil	2 - 4 weeks
	log Pow	5
	Mobility in soil	Not expected to reach groundwater
	Stability in water	Hydrolysis unstable at pH 9, half life 20-29 days at pH 5 and 7.

Chemical Name	log Pow
Naphtha (petroleum), heavy aromatic	2.9 - 6.1

13. DISPOSAL CONSIDERATIONS

Waste disposal methods	Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance.
Contaminated packaging	Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

14. TRANSPORT INFORMATION

DOT

Packaging Type	Non-Bulk, Bulk
UN/ID No	UN3352
Hazard Class	6.1
Packing group	III
Marine pollutant	Zeta-cypermethrin
Description	UN3352 Pyrethroid pesticide, liquid, toxic (Bifenthrin, Zeta-cypermethrin), 6.1 PG III
Additional information	When shipped in BULK this product is classified as a Marine Pollutant.

TDG

	The "Marine Pollutant" marking is only applicable when shipped by vessel or air, and is not applicable when shipped only by road or rail in Canada.
UN/ID No	UN3352
Hazard Class	6.1
Packing group	III
Marine pollutant	Bifenthrin, Zeta-cypermethrin.
Description	UN3352 Pyrethroid pesticide, liquid, toxic (Bifenthrin, Zeta-cypermethrin), 6.1 PG III, Marine Pollutant

ICAO/IATA

UN/ID No	UN3352
Hazard Class	6.1
Packing group	III
Marine pollutant	Bifenthrin, Zeta-cypermethrin

Description UN3352 Pyrethroid pesticide, liquid, toxic (Bifenthrin, Zeta-cypermethrin), 6.1, PG III, Marine pollutant
Limited quantity 2 L

IMDG/IMO

UN/ID No UN3352
Hazard Class 6.1
Packing group III
EmS No. F-A, S-A
Marine pollutant Description Bifenthrin, Zeta-cypermethrin
 UN3352 Pyrethroid pesticide, liquid, toxic (Bifenthrin, Zeta-cypermethrin), 6.1, PG III, Marine Pollutant

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Bifenthrin	82657-04-3	7.9	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard yes
Chronic Health Hazard yes
Fire Hazard no
Sudden Release of Pressure Hazard no
Reactive Hazard no

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

TSCA Inventory (United States of America)

International Regulations

Mexico - Grade

Moderate risk, Grade 2

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

D1B Toxic materials
 D2B Toxic materials



16. OTHER INFORMATION

Revision Date: 2013-10-15
Reason for revision: Initial Release.

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End of Material Safety Data Sheet