Material Safety Data Sheet
GardenTech Over'n Out Advanced Fire Ant Killer
EPA Registration No. 279-3344-71004

Date: July 2013

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	GardenTech Over'n Out Advanced Fire Ant Killer
Product codes	100515674, 100515675, 100515678, 100515681, 100515682
Active Ingredient(s)	Bifenthrin, Zeta-cypermethrin
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;
Chemical Family	Pyrethroid Pesticide
Recommended use:	Insecticide formulation

Manufacturer	**Emergency telephone number**
TechPac, LLC. 1000 Parkwood Circle Suite 700 Atlanta, GA 30339 General Information: Phone: 866-945-5033	Medical Emergencies: (Human or Animal) 800-420-9347 For leak, fire, spill or accident emergencies, call: 800-424-9300

2. HAZARDS IDENTIFICATION

Appearance	solid granules
Physical state	solid
Odor	No information available.
Flammable properties	Powdered material may form explosive dust-air mixtures

Potential health effects

Acute effects

Eyes	May cause slight irritation.
Skin	May cause sensitization by skin contact. Substance may cause slight skin irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Inhalation	May cause irritation of respiratory tract.

Ingestion Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic effects Repeated or prolonged exposure may cause central nervous system effects.

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 %
Calcium carbonate (limestone)	1317-65-3	50-60
Wood Fibers	65996-61-4	30-40
Hexylene Glycol	107-41-5	1-5
Starch	9005-25-8	1-5
1,1'-Biphenyl, bis(1-methylethyl)-	69009-90-1	1-5
Bifenthrin	82657-04-3	0.4
Petroleum distillates, hydrotreated light	64742-47-8	<1
Zeta-cypermethrin (F2700)	52315-07-8	0.07

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: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Notes to physician: This product is 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.

5. FIRE-FIGHTING MEASURES

Flammable properties Powdered material may form explosive dust-air mixtures

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 PROTECTION

Exposure guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Calcium carbonate (limestone) 1317-65-3		TWA: 15 mg/m^3 TWA: 5 mg/m^3	TWA: 10 mg/m^3 TWA: 5 mg/m^3	
Wood Fibers 65996-61-4		TWA: 5mg/m^3; PEL 15mg/m^3 (total, 5mg/m^3 (respiratory)		
Hexylene Glycol 107-41-5	Ceiling: 25 ppm		Ceiling: 25 ppm Ceiling: 125 mg/m^3	
Starch 9005-25-8	TWA: 10 mg/m^3	TWA: 15 mg/m^3 TWA: 5 mg/m^3	TWA: 10 mg/m^3 TWA: 5 mg/m^3	
Chemical Name	**British Columbia**	**Quebec**	**Ontario TWAEV**	**Alberta**
Calcium carbonate (limestone) 1317-65-3	TWA: 10 mg/m^3 TWA: 3 mg/m^3 STEL: 20 mg/m^3	TWA: 10 mg/m^3		TWA: 10 mg/m^3
Hexylene Glycol 107-41-5	Ceiling: 25 ppm	Ceiling: 25 ppm Ceiling: 121 mg/m^3	CEV: 25 ppm	Ceiling: 25 ppm Ceiling: 121 mg/m^3
Starch 9005-25-8	TWA: 10 mg/m^3 TWA: 3 mg/m^3	TWA: 10 mg/m^3	TWA: 10 mg/m^3	TWA: 10 mg/m^3
Petroleum distillates, hydrotreated light 64742-47-8	TWA: 200 mg/m^3 Skin			

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.

Personal Protective Equipment

General Information No information available.

Respiratory protection No information available.

Eye/face protection No information available.

Skin and body protection Wear long-sleeved shirt, long pants, socks, shoes, and gloves.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	solid granules
Physical state	solid
Odor	No information available.
pH	7.33
Melting Point/Range	No information available.
Freezing point	No information available.
Boiling Point/Range	Not applicable
Flash Point	Not applicable
Evaporation rate	Not applicable
Flammable properties	Powdered material may form explosive dust-air mixtures
Vapor pressure	No information available.
Vapor density	No information available.
Density	0.77-0.83 g/cm³
Water solubility	No information available
Percent volatile	No information available.
Partition coefficient:	Not applicable
Viscosity	No information available.

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

Acute Toxicity

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.

Large doses of zeta-cypermethrin, ingested by laboratory animals, may produce signs of toxicity including tremors, incoordination, convulsions, staggered gait, and oral discharge.

Eye contact	Mild irritant
Skin contact	Slightly or non-irritating (rabbit)
LD50 Dermal	> 5000 mg/kg (Rat)
LD50 Oral	727.3 mg/kg (Rat) (Based on a similar product)
LC50 Inhalation:	> 2.11 mg/L 4 hr (Rat)
Sensitization	Sensitizer

Chronic effects

Chronic Toxicity Repeated or prolonged exposure may cause central nervous system effects.

Carcinogenicity Bifenthrin: Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH). Did not show carcinogenic effects in animal experiments. 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 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.

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.

Chemical Name	ACGIH	IARC	NTP	OSHA	NIOSH - Target Organs
Calcium carbonate (limestone)					eyes,respiratory system,skin
Hexylene Glycol					eyes,CNS,respiratory system,skin
Starch					eyes,respiratory system,skin

12. ECOLOGICAL INFORMATION

Ecotoxicity

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
Petroleum distillates, hydrotreated light		LC50= 45 mg/L Pimephales promelas 96 h LC50= 2.2 mg/L Lepomis macrochirus 96 h LC50= 2.4 mg/L Oncorhynchus mykiss 96 h		LC50 = 4720 mg/L 96 h

Environmental Fate

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**
Hexylene Glycol	<0.14

Bioaccumulation Material will likely bioaccumulate in exposed species.

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 Not regulated for transportation if shipped in Non Bulk packaging. The classification below pertains to the shipment in Bulk packaging.

- **Packaging Type** Bulk,
- **UN/ID No** UN3077
- **Hazard Class** 9
- **Packing group** III
- **Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (Zeta-cypermethrin), 9, PGIII, Marine Pollutant
- **Additional information** Marine Pollutant mark only applies when shipping BULK packages.

TDG The "Marine Pollutant" marking is only applicable when shipped by vessel, and is not applicable when shipped only by road or rail in Canada.

- **UN/ID No** UN3077
- **Hazard Class** 9
- **Packing group** III
- **Marine pollutant** Bifenthrin. Zeta-cypermethrin.
- **Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (Bifenthrin, Zeta-cypermethrin), 9, PGIII, Marine Pollutant

ICAO/IATA

- **UN/ID No** UN3077
- **Hazard Class** 9
- **Packing group** III
- **Marine pollutant** Bifenthrin Zeta-cypermethrin
- **Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (Bifenthrin, Zeta-cypermethrin), 9, PGIII, Marine Pollutant

IMDG/IMO

- **UN/ID No** UN3077
- **Hazard Class** 9
- **Packing group** III
- **EmS No.** F-A, S-F

Marine pollutant	Bifenthrin Zeta-cypermethrin
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Bifenthrin, Zeta-cypermethrin), 9, PGIII, 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	0.4	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)

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
1,1'-Biphenyl, bis(1-methylethyl)-	06/28/1984

International Regulations

Mexico - Grade Slight risk, Grade 1

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 D2B Toxic materials

16. OTHER INFORMATION

Revision Date: July 2013
Reason for revision: (M)SDS sections updated.

Disclaimer
TechPac, LLC. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. Use of this product is regulated by the U.S. Environmental Protection Agency (EPA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Further, since the conditions and methods of use are beyond the control of Tech Pac, LLC. TechPac, LLC. expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

Prepared By

End of Material Safety Data Sheet