

Material Safety Data Sheet
Talstar® Xtra Granular Insecticide Featuring Verge Granule Technology

MSDS #: 6676-A

Revision Date: 2013-10-11
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	Talstar® Xtra Granular Insecticide Featuring Verge Granule Technology
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; F2700
Chemical Family	Pyrethroid Pesticide
Recommended use:	Insecticide
Manufacturer	Emergency telephone number
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

Appearance	granules
Physical state	solid
Odor	Mild detergent odor
Physical or Chemical Hazards	
Flammable properties	Powdered material may form explosive dust-air mixtures
Potential health effects	
Principle Routes of Exposure	Eye contact, Skin contact, Inhalation, Ingestion.
Acute effects	
Eyes	Moderately irritating to skin.
Skin	May cause sensitization by skin contact. Substance may cause slight skin irritation.
Inhalation	May cause irritation of respiratory tract.

Ingestion Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system depression.

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 %
bentonite	1302-78-9	80-90
crystalline silica, quartz	14808-60-7	5-10
Hexylene Glycol	107-41-5	1-5
1,1'-Biphenyl, bis(1-methylethyl)-	69009-90-1	1-5
Bifenthrin	82657-04-3	0.2
Zeta-cypermethrin	52315-07-8	0.05

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 (CO₂). 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. 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 cleaning up	Sweep up and shovel into suitable containers for 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.
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
bentonite 1302-78-9	TWA: 1 mg/m ³			
crystalline silica, quartz 14808-60-7	TWA: 0.025 mg/m ³	See note	IDLH: 50 mg/m ³ TWA: 0.05 mg/m ³	
Hexylene Glycol 107-41-5	Ceiling: 25 ppm		Ceiling: 25 ppm Ceiling: 125 mg/m ³	
Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
bentonite 1302-78-9	TWA: 1.0 mg/m ³		TWA: 1 mg/m ³	
crystalline silica, quartz 14808-60-7	TWA: 0.025 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.10 mg/m ³	TWA: 0.025 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

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	For dust, splash, mist or spray exposures wear a filtering mask.
Eye/face protection	For dust, splash, mist or spray exposure, wear chemical protective goggles or a face-shield.
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 PROPERTIES

Information on basic physical and chemical properties

Appearance	granules
Color	gray
Physical state	solid
Odor	Mild detergent odor
pH	6.5 - 7.0
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
Water solubility	Dispersible in water
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

Eye contact	Moderately irritating to skin
Skin contact	May cause slight irritation
LD50 Dermal	> 5000 mg/kg (rabbit)
LD50 Oral	550 mg/kg (Rat)
LC50 Inhalation:	> 2.11 mg/L (Rat)
Sensitization	This product produces skin sensitization (allergic reaction) in laboratory animals, and may produce similar effects in humans.

Chronic effects

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

Chronic Toxicity - Other Ingredient(s) Repeated overexposure to crystalline silica for extended periods has caused acute silicosis.

Chemical Name	ACGIH	IARC	NTP	OSHA	NIOSH - Target Organs
crystalline silica, quartz	A2	1	Known	X	eyes, respiratory system
Hexylene Glycol					eyes, CNS, respiratory system, skin

12. ECOLOGICAL INFORMATION

Marine pollutant Zeta-cypermethrin
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 (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
bentonite		LC50 8.0 - 19.0 g/L Salmo gairdneri 96 h LC50= 19000 mg/L Oncorhynchus mykiss 96 h		
Hexylene Glycol		LC50 10500 - 11000 mg/L Pimephales promelas 96 h LC50= 10000 mg/L Lepomis macrochirus 96 h LC50= 8690 mg/L Pimephales promelas 96 h LC50= 10700 mg/L Pimephales promelas 96 h		EC50 2700 - 3700 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
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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 (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

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.
UN/ID No	UN3077
Hazard Class	9
Packing group	III
Marine pollutant	Zeta-cypermethrin
Description	UN3077 Environmentally hazardous substances, solid, n.o.s.(Zeta-cypermethrin), 9 PG III
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	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, PG III
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, PG III
Limited quantity	30 kg G

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, PG III

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	0.2	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)

Component	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)- 69009-90-1 (1-5)	06/28/1984

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

D2A Very toxic materials
D2B Toxic materials



16. OTHER INFORMATION

Revision Date: 2013-10-11
Reason for revision: Initial Release.

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End of Material Safety Data Sheet