Material Safety Data Sheet

TALSTAR® EZ with Verge™ Technology

SDS # : 6584-A
Revision Date: 2012-02-22
Version 0.03

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

1. PRODUCT AND COMPANY IDENTIFICATION

Product name TALSTAR® EZ with Verge™ Technology

Formula code 6584

Active Ingredient(s) 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.

Chemical Family Pyrethroid Pesticide

Manufacturer
FMC Corporation
Agricultural Products Group
1735 Market Street
Philadelphia, PA 19103
General Information:
Phone: (215) 299-6000
E-Mail: msdsinfo@fmc.com

Emergency telephone number

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)
Medical Emergencies:
(800) 331-3148 (U.S.A. & Canada)
+1 (651) 632-6793 (All Other Countries - Collect)

2. Hazards identification

Appearance granules

Physical state solid

Odor odorless

Physical or Chemical Hazards .

Flammable properties Powdered material may form explosive dust-air mixtures

Potential health effects

Principle Routes of Exposure Skin contact, Eye contact, Inhalation. Ingestion.

Acute effects

- **Eyes** May cause irritation.
- **Skin** May cause irritation.
- **Inhalation** May cause irritation of respiratory tract.
- **Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic effects Prolonged exposure may cause chronic effects. See Section 11 for additional Toxicological Information.

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 %
crystalline silica, quartz	14808-60-7	10-15
Hexylene Glycol	107-41-5	1-5
Bifenthrin	82657-04-3	0.2

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 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 induce vomiting or 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

Flash Point not applicable
Sensitivity to Mechanical Impact not applicable
Sensitivity to Static Discharge not applicable

Suitable extinguishing media Use CO2, dry chemical, or foam.

Protective equipment and precautions for firefighters As in any fire, wear self-contained breathing apparatus and full protective gear.

NFPA

Health Hazard	1
Flammability	1
Stability	0
Special Hazards	-

6. Accidental release measures

Personal precautions Isolate and post spill area. Remove all sources of ignition. Ventilate the 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 containment Use a wet sweeping compound or water to prevent dust formation.

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 controls/personal protection

Exposure guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
crystalline silica, quartz 14808-60-7	TWA: 0.025 mg/m³	See note	IDLH: 50 mg/m³ TWA: 0.05 mg/m³	Mexico: TWA 0.1 mg/m³
Hexylene Glycol 107-41-5	Ceiling: 25 ppm		Ceiling: 25 ppm Ceiling: 125 mg/m³	Mexico: Ceiling 25 ppm Mexico: Ceiling 125 mg/m³

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
crystalline silica, quartz 14808-60-7	TWA: 0.025 mg/m³	TWA: 0.1 mg/m³	TWA: 0.10 mg/m³	TWA: 0.025 mg/m³
Hexylene Glycol 107-41-5	Ceiling: 25 ppm	Ceiling: 25 ppm Ceiling: 121 mg/m³	CEV: 25 ppm	Ceiling: 25 ppm Ceiling: 121 mg/m³

Occupational exposure controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. 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 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, 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. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

9. Physical and chemical properties

Appearance	granules
Color	light gray
Physical state	solid
Odor	odorless
pH	6.54
Melting Point/Range	No information available.
Freezing point	No information available
Boiling Point/Range	not applicable
Flash Point	not applicable
Evaporation rate	not applicable
Autoignition Temperature	not applicable
Flammable properties	Powdered material may form explosive dust-air mixtures
Vapor pressure	No information available
Vapor density	No information available
Density	0.81 g/mL
Water solubility	No information available
Percent volatile	No information available
Partition coefficient:	not applicable
Viscosity	No information available
Oxidizing properties	not applicable

10. Stability and reactivity

Stability Stable

Conditions to avoid Excessive heat.

Hazardous decomposition products Carbon oxides, Hydrogen chloride, Hydrogen fluoride.

Hazardous polymerization Hazardous polymerization does not occur.

11. Toxicological information

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.

Eye contact	Slightly or non-irritating (rabbit)
Skin contact	Slightly or non-irritating (rabbit).
LD50 Dermal	Bifenthrin: > 2,000 mg/kg (rabbit)
LD50 Oral	Similar formulation: > 5,000 mg/kg (rat)
LC50 Inhalation:	No information available
Sensitization	Non-sensitizing.

Chronic Toxicity - Other Ingredient(s)

Chronic Toxicity Prolonged exposure may cause chronic effects. See Section 11 for additional Toxicological Information.

Carcinogenicity Bifenthrin: Did not show carcinogenic effects in animal experiments. This product contains crystalline silica (quartz) in a non-respirable form. Inhalation of crystalline silica is unlikely to occur from exposure to this product. However, if granules are pulverized or crushed into a fine, respirable powder, silica exposure via inhalation is probable

Mutagenicity Bifenthrin: Not genotoxic.

Reproductive toxicity Bifenthrin: No toxicity to reproduction.

Neurological Effects Tremors were associated with chronic exposure of laboratory animals to bifenthrin, which may disappear with continued exposure.

Developmental Toxicity Bifenthrin: 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

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

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

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.

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 This material is not a hazardous material as defined by U.S. Department of Transportation at 49 CFR Parts 100 through 185.

Packaging Type Non-Bulk, Bulk

TDG Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

Proper shipping name Environmentally hazardous substance, solid, n.o. s.
Hazard Class 9
UN/ID No UN3077
Packing group III
Marine pollutant Bifenthrin.

ICAO/IATA

UN/ID No UN3077
Proper shipping name Environmentally hazardous substance, solid, n.o. s.
Hazard Class 6.1
Packing group III
Marine pollutant Bifenthrin

IMDG/IMO

Proper shipping name Environmentally hazardous substance, solid, n.o. s.
Hazard Class 9
UN/ID No UN3077
Packing group III
EmS No. F-A, S-F

Marine pollutant Bifenthrin

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	no
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.

International Regulations

Mexico - Grade Slight risk, Grade 1

Chemical Name	Carcinogen Status	Mexico
crystalline silica, quartz		Mexico: TWA 0.1 mg/m³
Hexylene Glycol		Mexico: Ceiling 25 ppm Mexico: Ceiling 125 mg/m³

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

16. Other information

Revision Date: 2012-02-22
Reason for revision: (M)SDS sections updated: 11, 15.

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End of Material Safety Data Sheet