



SAFETY DATA SHEET

Talstar® 100 EC Insecticide

SDS #: 0681-A
Revision date: 2018-08-03
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Version 1

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Talstar® 100 EC Insecticide
Product Code(s)	0681-A
Synonyms	BIFENTHRIN: (2-methyl[1,1'-biphenyl]-3-yl)methyl (1R,3R)-rel-3-[(1Z)-2-chloro-3,3,3-trifluoro-1-propenyl]-2,2-dimethylcyclopropanecarboxylate (CAS name); 2-methyl-3-phenylbenzyl (1RS)-cis-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC name)
Active Ingredient(s)	Bifenthrin
Alternate Commercial Name	Biflex® 10 TC; Brigata®; Talstar 10 EC; Talstar 100 EC; Brigada 100 EC; Brigade 100 EC
Chemical Family	Pyrethroid Pesticide
Recommended Use:	Insecticide.
Manufacturer/Supplier	FMC Corporation 2929 Walnut Street Philadelphia, PA 19104 (215) 299-6000 (General Information) msdsinfo@fmc.com (E-Mail General Information) Telephone: 86 21 20675888 Telefax: 86 21 20675858
Emergency telephone	86 532 8388 9090

Section 2: HAZARDS IDENTIFICATION

GHS - Classification

Aspiration toxicity	Category 1
Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 5
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1B
Carcinogenicity	Category 2
STOT - single exposure	Category 1
Specific target organ toxicity (repeated exposure)	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

Flammable liquids	Category 3
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Label Elements



Signal Word

Danger

Hazard Statements

H302 - Harmful if swallowed
 H313 - May be harmful in contact with skin
 H304 - May be fatal if swallowed and enters airways
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H351 - Suspected of causing cancer
 H370 - Causes damage to organs
 H372 - Causes damage to organs through prolonged or repeated exposure
 H410 - Very toxic to aquatic life with long lasting effects
 H226 - Flammable liquid and vapor

Precautionary Statements - Prevention

P201 - Obtain special instructions before use
 P202 - Do not handle until all safety precautions have been read and understood
 P281 - Use personal protective equipment as required
 P264 - Wash face, hands and any exposed skin thoroughly after handling
 P270 - Do not eat, drink or smoke when using this product
 P272 - Contaminated work clothing should not be allowed out of the workplace
 P280 - Wear protective gloves
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray
 P273 - Avoid release to the environment
 P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
 P233 - Keep container tightly closed
 P240 - Ground/bond container and receiving equipment
 P241 - Use explosion-proof electrical/ventilating/lighting/./equipment
 P242 - Use only non-sparking tools
 P243 - Take precautionary measures against static discharge

Precautionary Statements - Response

P321 - Specific treatment (see supplemental first aid instructions on this label)
 P308 + P311 - If exposed or concerned: Call a POISON CENTER or doctor
 P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
 P363 - Wash contaminated clothing before reuse
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER or doctor
 P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor
 P331 - Do NOT induce vomiting
 P330 - Rinse mouth
 In case of fire: Use CO₂, dry chemical, or foam for extinction
 P391 - Collect spillage

Precautionary Statements - Storage

P405 - Store locked up

P403 + P235 - Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

P501 - Dispose of contents/container to an approved waste disposal plant

Other Information

May be fatal if swallowed and enters airways

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms BIFENTHRIN: (2-methyl[1,1'-biphenyl]-3-yl)methyl

(1R,3R)-rel-3-[(1Z)-2-chloro-3,3,3-trifluoro-1-propenyl]-2,2-dimethylcyclopropanecarboxylate (CAS name); 2-methyl-3-phenylbenzyl
(1RS)-cis-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC name)

Chemical name	CAS-No	Weight %
Bifenthrin	82657-04-3	11
Naphtha (petroleum), heavy aromatic	64742-94-5	>70
Pseudocumene	95-63-6	20 - 30
Xylenes	1330-20-7	1 - 5
Cumene	98-82-8	0.1 - 1

Section 4: FIRST AID MEASURES

Inhalation	Move to fresh air. If person is not breathing, contact emergency medical services, then give artificial respiration, preferably mouth-to-mouth, if possible. 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 further treatment advice.
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.
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 induce vomiting or give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	Central nervous system effects.
Protection of first-aiders	Use personal protective equipment. See Section 8 for more detail.
Indication of immediate medical attention and special treatment needed, if necessary	Contains petroleum distillate. Vomiting may cause aspiration pneumonia. 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.

Section 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Foam. Carbon dioxide (CO ₂). Dry chemical. Water spray or fog.
Unsuitable extinguishing media	No information available
Specific Hazards Arising from the Chemical	Thermal decomposition can lead to release of irritating gases and vapors.
Protective equipment and precautions for firefighters	Isolate fire area. Evaluate upwind. As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 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.
Other	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
Environmental Precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Keep out of waterways.
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 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.

Section 7: HANDLING AND STORAGE

Handling	Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for 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. Keep/store only in original container.
Materials to avoid	Strong oxidizing agents, Strong acids, Strong bases.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Component	China	Japan	Korea	Australia	Taiwan
Pseudocumene 95-63-6 (20 - 30)		OEL: 25 ppm OEL: 120 mg/m ³			
Xylenes 1330-20-7 (1 - 5)	TWA: 50 mg/m ³ STEL: 100 mg/m ³	OEL: 50 ppm OEL: 217 mg/m ³ ISHL/ACL: 50 ppm	STEL: 150 ppm TWA: 100 ppm	STEL 150 ppm STEL 655 mg/m ³ TWA 80 ppm TWA 350 mg/m ³	STEL 125 ppm STEL 542.5 mg/m ³
Cumene 98-82-8 (0.1 - 1)		C2B	S* TWA: 50 ppm	STEL 75 ppm STEL 375 mg/m ³ TWA 25 ppm TWA 125 mg/m ³	S* STEL 75 ppm STEL 307.5 mg/m ³

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	
Respiratory Protection	The product does not automatically present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material which produces a heavy vapour or mist, workers should put on officially approved respiratory protection equipment with a universal filter type including particle filter.
Hand Protection	Wear chemical protective gloves made of materials such as nitrile or neoprene.
Eye/Face Protection	For dust, splash, mist or spray exposure, wear chemical protective goggles.
Skin and Body Protection	Minimize skin contamination by following good industrial hygiene practices. Wear suitable

protective clothing. Protective shoes or boots.

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.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid suspension
Odor	Aromatic
Color	Light brown
Odor threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Boiling Point/Range	No information available
Flash point	40 °C / 104 °F Tag Closed Cup
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	0.9133- 0.916
Water solubility	Emulsifies
Solubility(ies)	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Density	7.61 lb/gal
Bulk density	No information available

Section 10: STABILITY AND REACTIVITY

Reactivity	Not applicable.
Stability	Stable under recommended storage conditions.
Hazardous reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to Avoid	Heat, flames and sparks.
Incompatible products	Strong oxidizing agents, Strong acids, Strong bases.
Hazardous Decomposition Products	Carbon oxides (COx). Hydrogen chloride. Hydrogen fluoride.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity**Numerical measures of toxicity - Product Information**

LD50 Oral	520 mg/kg (rat)
LD50 Dermal	> 2000 mg/kg (rabbit)
LC50 Inhalation	> 5.2 mg/L 4 hr (rat)

Skin corrosion/irritation Minimally irritating (rabbit).
Serious eye damage/eye irritation Severely irritating.
Sensitization Sensitizer.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Mutagenicity Bifenthrin: Not genotoxic in laboratory studies.
Carcinogenicity Bifenthrin: Weak treatment-related response for liver adenocarcinomas and benign bladder tumors (lesion) in male mice.
Reproductive toxicity Bifenthrin: No toxicity to reproduction in animal studies.
Developmental toxicity Bifenthrin: Not teratogenic in animal studies.
STOT - single exposure Causes damage to organs. See listed target organs below.
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. See listed target organs below.
Chronic toxicity Bifenthrin: Long-term exposure caused neurotoxicity (tremors and impaired gait) in the early exposure in animal studies, but tremors disappeared with continued exposure.
Target organ effects Bifenthrin: Central Nervous System.
Neurological effects Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure.
Symptoms Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge.
Aspiration hazard Potential for aspiration if swallowed. May be fatal if swallowed and enters airways.

Chemical name	China	IARC
Xylenes		Group 3
Cumene		Group 2B

IARC (International Agency for
Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans Group 3 - Not classifiable as to its carcinogenicity to humans

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Very toxic to aquatic life with long lasting effects.

Bifenthrin (82657-04-3)				
Active Ingredient(s)	Duration	Species	Value	Units
Bifenthrin	96 h LC50	Fish	0.1	µg/L
	72 h EC50	Algae	0.822	mg/L
	48 h EC50	Crustacea	0.11	µg/L
	21 d NOEC	Fish	0.012	µg/L
	21 d NOEC	Crustacea	0.0013	µg/L

Persistence and degradability Bifenthrin: Moderately persistent. Does not readily hydrolyze. Not readily biodegradable.

Bioaccumulation Bifenthrin: The substance has a potential for bioconcentration.

Mobility Bifenthrin: Immobile. Not expected to reach groundwater.

Other Adverse Effects No information available.

Section 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. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.
Contaminated Packaging	Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

UN/ID no	UN1993
Proper Shipping Name	Flammable liquid, n.o.s
Hazard class	3
Packing Group	III
EmS No.	F-E, S-E
Marine Pollutant	Bifenthrin

ICAO/IATA

UN/ID no	UN1993
Proper Shipping Name	Flammable liquid, n.o.s
Hazard class	3
Packing Group	III
Marine Pollutant	Bifenthrin

Section 15: REGULATORY INFORMATION

International Inventories

A food, food additive, drug, cosmetic, or device, when manufactured, processed or distributed in commerce for use as a food, food additive, drug, cosmetic, or device may not be subject to local notification requirements. Check local regulations for more information.

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Bifenthrin 82657-04-3				X	X	X		
Naphtha (petroleum), heavy aromatic 64742-94-5	X	X	X		X	X	X	X
Pseudocumene 95-63-6	X	X	X	X	X	X	X	X
Xylenes 1330-20-7	X	X	X	X	X	X	X	X
Cumene 98-82-8	X	X	X	X	X	X	X	X

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

Section 16: OTHER INFORMATION

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Revision note (M)SDS sections updated.

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End of Safety Data Sheet