1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name TALSTAR® SELECT INSECTICIDE

Other means of identification

Product Code(s) 1349-5-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

Chemical Family Pyrethroid Pesticide

Recommended use of the chemical and restrictions on use

Recommended Use: Insecticide

Restrictions on Use: Use as recommended by the label.

Supplier Address

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
(215) 299-6000 (General Information)
msdsinfo@fmc.com (E-Mail General Information)

Emergency telephone number

For leak, fire, spill or accident emergencies, call:
1 800 / 424-9300 (CHEMTREC - U.S.A.)
1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)
1 202 / 483-7616 (CHEMTREC - Alternate International)

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

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Acute toxicity - Oral Category 4
Acute toxicity - Inhalation (Dusts/Mists) Category 4
Carcinogenicity Category 2
Specific target organ toxicity (single exposure) Category 1
Specific target organ toxicity (repeated exposure) Category 1

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Hazard Statements
H302 - Harmful if swallowed
H332 - Harmful if inhaled
H351 - Suspected of causing cancer
H370 - Causes damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
P308 + P311 - If exposed or concerned: Call a POISON CENTER or doctor
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER or doctor if you feel unwell
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth

Precautionary Statements - Storage
P405 - Store locked up

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

Hazards not otherwise classified (HNOC)
No hazards not otherwise classified were identified.

Other Information
Very toxic to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS
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 further treatment advice.

Inhalation
Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably 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.

Most important symptoms and effects, both acute and delayed
Central nervous system effects.

Indication of immediate medical attention and special treatment needed, if necessary
Treat symptomatically. 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

Suitable Extinguishing Media

Unsuitable extinguishing media
Avoid heavy hose streams.

Specific Hazards Arising from the Chemical
None known

Explosion data

Sensitivity to Mechanical Impact
No information available.

Sensitivity to Static Discharge
No information available.

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

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.

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.

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.

Incompatible products
None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>British Columbia</th>
<th>Quebec</th>
<th>Ontario TWAEV</th>
<th>Alberta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol</td>
<td>-</td>
<td>-</td>
<td>TWA: 10 mg/m³ aerosol only</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(57-55-6)</td>
<td></td>
<td>TWA: 50 ppm aerosol and vapor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA: 155 mg/m³ aerosol and vapor</td>
<td></td>
</tr>
</tbody>
</table>

Appropriate engineering 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.

Individual protection measures, such as personal protective equipment

Eye/Face Protection
This product does not cause significant eye irritation or eye toxicity requiring special protection. Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

Skin and Body Protection
Wear long-sleeved shirt, long pants, socks, and shoes.

Hand Protection
Protective gloves

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.

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.

General information
If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
10. STABILITY AND REACTIVITY

Reactivity
None under normal use conditions

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization
Hazardous polymerization does not occur.

Conditions to avoid
Heat, flames and sparks.

Incompatible materials
None known.

Hazardous Decomposition Products
Carbon oxides (COx), Hydrogen chloride, Hydrogen fluoride, Chlorine, fluorine.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral 632 mg/kg (rat)
LD50 Dermal > 2000 mg/kg (rabbit)
LC50 Inhalation 1.60 mg/L 4 hr (rat)

Serious eye damage/eye irritation
Practically non-irritating.

Skin corrosion/irritation
Non-irritating.

Sensitization
Non-sensitizing.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin (82657-04-3)</td>
<td>55 mg/kg (rat)</td>
<td>&gt; 2000 mg/kg (rat)</td>
<td>0.8 mg/L (female, rat) 4 h</td>
</tr>
<tr>
<td>Propylene glycol (57-55-6)</td>
<td>20000 mg/kg (Rat)</td>
<td>20800 mg/kg (Rabbit)</td>
<td></td>
</tr>
</tbody>
</table>

Information on toxicological effects
**Symptoms**

Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge.

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

**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.

**Mutagenicity**

Bifenthrin: Not genotoxic in laboratory studies.

**Carcinogenicity**

Bifenthrin: Weak treatment-related response for liver adenocarcinomas and benign bladder tumors (lesion) in male mice.

**Neurological effects**

Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure.

**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.

**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.

**Aspiration hazard**

No information available.

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

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

**Persistence and degradability**


**Bioaccumulation**

Bifenthrin: The substance has a potential for bioconcentration.

**Mobility**

Bifenthrin: Immobile. Not expected to reach groundwater.

### 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.
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.

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

UN/ID no: UN3082
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Hazard class: 9
Packing Group: III
Marine Pollutant: Bifenthrin.
Description: UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9, III

ICAO/IATA

UN/ID no: UN3082
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Hazard class: 9
Packing Group: III
Description: UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9, III
Limited quantity: 30 kg G

IMDG/IMO

UN/ID no: UN3082
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Hazard class: 9
Packing Group: III
EmS No.: F-A, S-F
Marine Pollutant: Bifenthrin
Description: UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9, 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:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin - 82657-04-3</td>
<td>82657-04-3</td>
<td>7.9</td>
<td>1.0</td>
</tr>
</tbody>
</table>

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

Clean Water Act
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide 1310-73-2</td>
<td>1000 lb</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Hazardous Substances RQs</th>
<th>Extremely Hazardous Substances RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide 1310-73-2</td>
<td>1000 lb 454 kg</td>
<td></td>
</tr>
</tbody>
</table>

**FIFRA INFORMATION**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**CAUTION**
Harmful if swallowed, inhaled or absorbed through skin.
This pesticide is extremely toxic to fish and aquatic invertebrates.

**US State Regulations**

**California Proposition 65**
This product contains the following Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin 82657-04-3</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propylene glycol 57-55-6</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**International Inventories**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>TSCA (United States)</th>
<th>DSL (Canada)</th>
<th>EINECS/ELINCS (Europe)</th>
<th>ENCS (Japan)</th>
<th>China (IECSC)</th>
<th>KECL (Korea)</th>
<th>PICCS (Philippines)</th>
<th>AICS (Australia)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin 82657-04-3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propylene glycol 57-55-6</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Mexico - Grade**
Serious risk, Grade 3

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Mexico - Pollutant Release and Transfer Register - Reporting Emissions for Fabrication, Process or Use - Threshold Quantities</th>
<th>Pollutant Release and Transfer Register - Reporting Emissions - Threshold Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin</td>
<td>100 2500 kg/yr</td>
<td>100 kg/yr</td>
</tr>
</tbody>
</table>

**WHMIS Statement**
This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

**WHMIS Hazard Class**
D2A - Very toxic materials
16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Special Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>HMIS</td>
<td>Health Hazards</td>
<td>2*</td>
<td>Flammability</td>
<td>Physical hazard</td>
</tr>
<tr>
<td></td>
<td>2*</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Indicates a chronic health hazard.

NFPA/HMIS Ratings Legend
Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date: 2019-03-19
Reason for revision: SDS sections updated

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End of Safety Data Sheet