1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Beleaf® 50 SG Insecticide

Other means of identification

Product Code(s): 6225-A

Synonyms: N-(cyanomethyl)-4-(trifluoromethyl)-3-pyridinecarboxamide

Active Ingredient(s): Flonicamid

Chemical Family: Pyridinecarboxamide Insecticide

Recommended use of the chemical and restrictions on use

Recommended Use: Insecticide

Restrictions on Use: Use as recommended by the label

Manufacturer Address

FMC Corporation
1735 Market Street
Philadelphia, PA 19103
(215) 299-6000 (General Information)
madsinfo@fmc.com (E-Mail General Information)

Emergency telephone number

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

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Specific target organ toxicity (single exposure): Category 2

GHS Label elements, including precautionary statements
EMERGENCY OVERVIEW

Warning

Hazard Statements
H371 - May cause damage to organs

Precautionary Statements - Prevention
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product

Precautionary Statements - Response
P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor

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
May cause moderate eye irritation.
May form combustible dust concentrations in air

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family
Pyridinecarboxamide Insecticide.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flonicamid</td>
<td>158062-67-0</td>
<td>50</td>
</tr>
</tbody>
</table>

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

Eye Contact
Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. 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.
Beleaf® 50 SG Insecticide

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. Call a physician or poison control center immediately. 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
None known.

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

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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Carbon dioxide (CO₂). Foam. Dry chemical. If necessary: Use water spray or fog; do not use straight streams.

Specific Hazards Arising from the Chemical
Combustible material

Hazardous Combustion Products
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data
Sensitivity to Mechanical Impact
Not sensitive.

Sensitivity to Static Discharge
Not sensitive.

Protective equipment and precautions for firefighters
Wear self-contained breathing apparatus and protective suit. Isolate fire area. Evaluate downwind.

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6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
For personal protection see section 8. Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection.

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.

Methods for Containment
Cover powder spill with plastic sheet or tarp to minimize spreading. Use a wet sweeping compound or water to prevent dust formation. Dike far ahead of spill to collect runoff water. Vacuum, shovel or pump waste into a drum and label contents for 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.

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7. HANDLING AND STORAGE

Handling
Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal. Reference to other sections.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep/store only in original container.

Incompatible products
None known.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Beleaf® 50 SG Insecticide

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

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 For dust, splash, mist or spray exposure, wear chemical protective goggles.

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

Hand Protection Protective gloves

Respiratory Protection For dust, splash, mist or spray exposures wear a filtering mask.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Granules, light brown</td>
</tr>
<tr>
<td>Physical State</td>
<td>Dry powder</td>
</tr>
<tr>
<td>Color</td>
<td>Light brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>6.0 @ 25 °C (1% solution)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>33.5 lb/cu ft (loose); 37.2 lb/cu ft (tapped)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No information available</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No information available</td>
</tr>
</tbody>
</table>

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
Thermal decomposition can lead to release of irritating gases and vapors.

11. TOXICOLOGICAL INFORMATION

Product Information
LD50 Oral
> 2,000 mg/kg (rat)
LD50 Dermal
Similar material: > 2,000 mg/kg (rat)
LC50 Inhalation
> 5.36 mg/L 4 hr (rat)

Serious eye damage/eye irritation
Moderately irritating.

Skin corrosion/irritation
Non-irritating during normal use (rabbit).

Sensitization
Based on a similar formulation, this product is not expected to produce skin sensitization.

Information on toxicological effects

Symptoms
No information available.

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

Chronic toxicity
Flonicamid: Repeated contact may cause allergic reactions in very susceptible persons.

Mutagenicity
Flonicamid: Not genotoxic in laboratory studies.

Carcinogenicity
Flonicamid: Suggestive evidence of carcinogenicity (mouse bronchioloalveolar tumors), but not sufficient to assess human carcinogenic potential.

Neurological effects
Flonicamid: Not neurotoxic.

Reproductive toxicity
Flonicamid: No toxicity to reproduction in animal studies.

Developmental toxicity
Flonicamid: Not teratogenic in animal studies.

STOT - single exposure
May cause damage to organs: See listed target organs below.

STOT - repeated exposure
Not classified.

Target organ effects
Flonicamid: Liver, kidney, Hematopoietic system.

Neurological effects
Flonicamid: Not neurotoxic.

Aspiration hazard
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

<table>
<thead>
<tr>
<th>Flonicamid (158062-67-0)</th>
<th>Duration</th>
<th>Species</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active Ingredient(s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flonicamid Technical</td>
<td>96 h LC50</td>
<td>Fish</td>
<td>&gt;100</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>48 h EC50</td>
<td>Crustacea</td>
<td>&gt;100</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>96 h EC50</td>
<td>Algae</td>
<td>&gt;100</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>21 d NOEC</td>
<td>Fish</td>
<td>10</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>21 d NOEC</td>
<td>Crustacea</td>
<td>3.1</td>
<td>mg/L</td>
</tr>
</tbody>
</table>
Beleaf® 50 SG Insecticide

Persistence and degradability
Flonicamid: Non-persistent. Does not readily hydrolyze. Readily biodegradable (meets the >70% reduction in ≤ 28 days).

Bioaccumulation
Flonicamid: The substance does not have a potential for bioconcentration.

Mobility
Flonicamid: Very mobile: has potential to reach groundwater.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods
Can be incinerated, when in compliance with local regulations. The appropriate regulatory agencies should be contacted prior to disposal. 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
Dispose of in accordance with local regulations. Completely empty bag into application equipment by shaking and tapping sides and bottom to loosen clinging particles. When completely empty, offer for recycling if available, or dispose of bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions. Do not reuse or refill this container.

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
Not regulated in transportation

ICAO/IATA
Not regulated in transportation.

IMDG/IMO
Not regulated in transportation.

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:

SARA 311/312 Hazard Categories

<table>
<thead>
<tr>
<th>Acute health hazard</th>
<th>Chronic health hazard</th>
<th>Fire hazard</th>
<th>Sudden release of pressure hazard</th>
<th>Reactive Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

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

FIFRA Information
Beleaf® 50 SG Insecticide

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 or absorbed through the skin. Causes moderate eye irritation.

### US State Regulations

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>California Prop. 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde - 50-00-0</td>
<td>Carcinogen</td>
</tr>
<tr>
<td>Naphthalene - 91-20-3</td>
<td>Carcinogen</td>
</tr>
</tbody>
</table>

### U.S. State Right-to-Know Regulations
This product does not contain any substances regulated by state right-to-know regulations

### International Inventories

<table>
<thead>
<tr>
<th>Component</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>Flonicamid</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TSCA**
158062-67-0 (  50 )

### WHMIS Statement
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**
Non-controlled

### NFPA

<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>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>

### HMIS

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Physical hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

Revision date: 2015-04-20
Revision note: (M)SDS sections updated

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Prepared By: