

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

Precautionary Statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear eye protection/ face protection.

Response:
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
flonicamid (ISO)	158062-67-0	50
Sodium alkyl naphthalene sulfonate	68425-94-5	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Wash off with soap and water.
If symptoms persist, call a physician.
Wash contaminated clothing before re-use.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : Causes serious eye irritation.

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10/13/2023	50000163	Date of first issue: 10/13/2023

Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media : Do not spread spilled material with high-pressure water streams.

Hazardous combustion products : Thermal decomposition can lead to release of toxic and irritating vapors.

Specific extinguishing methods : Use a water spray to cool fully closed containers. Remove undamaged containers from fire area if it is safe to do so.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Do not touch or walk through the spilled material. If it can be safely done, stop the leak. Use personal protective equipment. Evacuate personnel to safe areas. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Never return spills in original containers for re-use. Pick up and transfer to properly labeled containers without creating dust. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10/13/2023	50000163	Date of first issue: 10/13/2023

- Advice on safe handling : Avoid formation of respirable particles.
Do not breathe vapors/dust.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

- Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.
- Filter type : Particulates type
- Hand protection
Material : Protective gloves
- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.
- Skin and body protection : Dust impervious protective suit
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Protective measures : Plan first aid action before beginning work with this product.
- Hygiene measures : Do not breathe dust.
Avoid contact with skin, eyes and clothing.
Wash hands before breaks and at the end of workday.
When using do not eat or drink.
When using do not smoke.

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : solid

Form : granules

Color : brown

Odor : ammoniacal

Odor Threshold : No data available

pH : 8.3 (72 °F / 22 °C)

Melting point/range : 315.5 °F / 157.5 °C

Boiling point/boiling range : No data available

Flash point : > 572 °F / > 300 °C

Evaporation rate : Not applicable

Flammability (solid, gas) : The product is not flammable.

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : Not applicable

Relative vapor density : Not applicable

Relative density : No data available

Density : 0.543 g/cm³

Solubility(ies)

 Water solubility : soluble

 Solubility in other solvents : insoluble
 Solvent: Methanol

 insoluble

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

Solvent: hexane

Partition coefficient: n-octanol/water : log Pow: 0.3 (85.6 °F / 29.8 °C)

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity

 Viscosity, dynamic : Not applicable

 Viscosity, kinematic : Not applicable

Explosive properties : Not explosive

Oxidizing properties : Non-oxidizing

Surface tension : Not applicable

Molecular weight : Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : Dust may form explosive mixture in air.
No decomposition if stored and applied as directed.

Conditions to avoid : Avoid extreme temperatures.
Avoid dust formation.

Incompatible materials : Avoid strong acids, bases, and oxidizers.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The component/mixture is minimally toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat): > 5.36 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is minimally toxic after short term inhalation.

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The component/mixture is minimally toxic after single contact with skin.

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Assessment : Not classified as irritant
Result : slight or no skin irritation.
Remarks : May cause skin irritation in susceptible persons.

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Species : Rabbit
Result : Eye irritation
Assessment : Irritating to eyes.

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Species : Guinea pig
Result : Does not cause skin sensitization.

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Test Type: Micronucleus test
Result: negative

Carcinogenicity

Not classified based on available information.

Product:

Carcinogenicity - Assess- : A slight increased incidence in tumors was observed in one

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

Application Route : Oral
Exposure time : 90 day
Method : OPPTS 870.3100
Target Organs : Kidney
Remarks : Based on available data, the classification criteria are not met.

Species : Dog, male and female
NOAEL : 20 mg/kg bw/day
Application Route : Oral
Exposure time : 90 day
Method : OECD Test Guideline 409

Aspiration toxicity

Not classified based on available information.

Neurological effects

Components:

flonicamid (ISO):

No neurotoxicity observed in animal studies.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 141.6 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 126.13 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 194.13 mg/l
Exposure time: 72 h

Toxicity to soil dwelling organisms : (Eisenia fetida (earthworms)): > 1,000 mg/kg
Exposure time: 14 d

Toxicity to terrestrial organisms : LD50 (Apis mellifera (bees)): 0.04487 mg/kg
Exposure time: 24 h

LD50 (Apis mellifera (bees)): 0.03186 mg/kg
Exposure time: 48 h

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

LD50 (Coturnix japonica (Japanese quail)): 1,055.9 mg/kg

Components:

flonicamid (ISO):

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
- LC50 (Lepomis macrochirus (Bluegill sunfish)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
- LC50 (Cyprinodon variegatus (sheepshead minnow)): > 120 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
- Toxicity to algae/aquatic plants : EC50 (algae): > 119 mg/l
End point: Growth inhibition
Exposure time: 96 h
- EC50 (Lemna sp.): > 119 mg/l
Exposure time: 7 d
Test Type: static test
- Toxicity to fish (Chronic toxicity) : NOEC (Fish): 10 mg/l
Exposure time: 21 d
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Crustaceans): 3.1 mg/l
Exposure time: 21 d
- Toxicity to soil dwelling organisms : LC50 (worms): > 1,000 mg/kg
- Toxicity to terrestrial organisms : LD50 (Colinus virginianus (Bobwhite quail)): > 2,000 mg/kg
- LC50 (Colinus virginianus (Bobwhite quail)): > 5,000 mg/kg
Remarks: Dietary
- LC50 (Anas platyrhynchos (Mallard duck)): > 5,000 mg/kg
Remarks: Dietary
- LD50 (Anas platyrhynchos (Mallard duck)): 1,591 - 2,621 mg/kg

Sodium alkyl naphthalene sulfonate:

- Toxicity to fish : LC50 (Zebra fish): > 10 - 100 mg/l

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

EC10 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): > 10 - 100 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

Persistence and degradability

Components:

flonicamid (ISO):

Biodegradability : Result: Readily biodegradable.

Stability in water : Remarks: resistant to hydrolysis

Sodium alkyl naphthalene sulfonate:

Biodegradability : Result: Not readily biodegradable.
Remarks: Based on data from similar materials

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Components:

flonicamid (ISO):

Partition coefficient: n-octanol/water : log Pow: 0.3

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

Mobility in soil

Components:

flonicamid (ISO):

Distribution among environmental compartments : Remarks: Mobile in soils

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

Not regulated as a dangerous good

Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

D-Glucose, 4-O-β-D-galactopyranosyl-, monohydrate	64044-51-5
flonicamid (ISO)	158062-67-0
Sodium alkyl naphthalene sulfonate	68425-94-5

Maine Chemicals of High Concern

Product does not contain any listed chemicals

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

The ingredients of this product are reported in the following inventories:

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIRC	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. flonicamid (ISO)
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

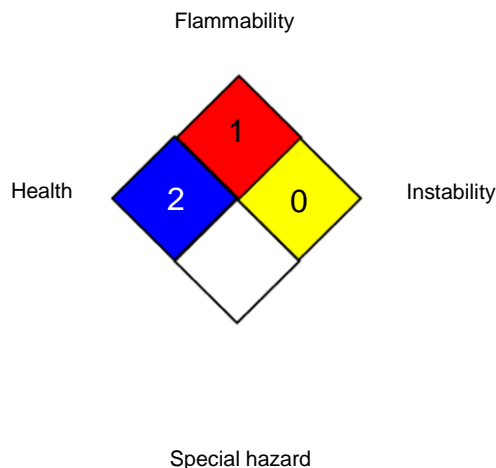
SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version 1.0 Revision Date: 10/13/2023 SDS Number: 50000163 Date of last issue: -
Date of first issue: 10/13/2023

NFPA 704:



0 No health threat, 1 Slightly Hazardous, 2 Hazardous, 3 Extreme danger, 4 Deadly

HMIS® IV:

HEALTH	/	2
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Con-

SAFETY DATA SHEET



BELEAF® 50 SG INSECTICIDE

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10/13/2023	50000163	Date of first issue: 10/13/2023

trol Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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End of Material Safety Data Sheet