SAFETY DATA SHEET

DIFLUFENICAN 500 g/l + FLORASULAM 50 g/l SC

Revision: Sections containing a revision or new information are marked with a ★.

★ SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. **Product identifier** .......................... LECTOR DELTA
     DIIFLUFENICAN 500 g/l + FLORASULAM 50 g/l SC

1.2. **Relevant identified uses of the substance or mixture and uses advised against** ............................ Can be used as herbicide only.

1.3. **Details of the supplier of the safety data sheet**

CHEMINOVA A/S
Thyborønvej 78
DK-7673 Harboøre
Denmark
SDS.Ronland@fmc.com

1.4. **Emergency telephone number**

Company ............................................. (+45) 97 83 53 53 (24 h; for emergencies only)

**Medical emergencies:**
Austria: +43 1 406 43 43
Belgium: +32 70 245 245
Bulgaria: +359 2 9154 409
Czech Republic: +420 224 919 293
+420 224 915 402
Denmark: +45 82 12 12 12
France: +33 (0) 1 45 42 59 59
Finland: +358 9 471 977
Hungary: +36 80 20 11 99
Ireland (Republic): +352 1 809 2166
Italy: +39 02 6610 1029
Lithuania: +370 523 62052
+370 687 53378
Luxembourg: +352 8002 5500
Netherlands: +31 30 274 88 88
Norway: +47 22 591300
Poland: +48 22 619 08 97
Portugal: 808 250 143 (in Portugal only)
+351 21 330 3284
Romania: +40 21318 3606
Slovakia: +421 2 54 77 4 166
Slovenia: +386 41 650 500
Spain: +34 91 562 04 20
Sweden: +46 08-331231
Switzerland: 145
United Kingdom: 0870 600 6266 (in the UK only)
U.S.A. & Canada: +1 800 / 331-3148 (PROSAR)
All other countries: +1 651 / 632-6793 (PROSAR - Collect)

SECTION 2: HAZARDS IDENTIFICATION

2.1. **Classification of the substance or mixture**

Hazards to the aquatic environment, acute: Category 1 (H400)
chronic Category 1 (H410)
WHO classification .................. Class U (unlikely to present acute hazard in normal use)

Health hazards ...................... The product is not likely to pose any health risk during normal use. However, it should always be treated with the usual care of handling chemicals.

Environmental hazards .................. The product is expected to be toxic to most plants.

2.2. Label elements
According to EU Reg. 1272/2008 as amended
Product identifier ..................... Diflufenican 500 g/l + Florasulam 50 g/l SC

Hazard pictogram (GHS09) ...........

Signal word ......................... Warning

Hazard statement
H410 ................................. Very toxic to aquatic life with long lasting effects.

Supplementary hazard statements
EUH208 .............................. Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
EUH401 .............................. To avoid risks to human health and the environment, comply with the instructions of use.

Precautionary statements
P273 ................................. Avoid release to the environment.
P391 ................................. Collect spillage.
P501 ................................. Dispose of contents/container as hazardous waste.

2.3. Other hazards .................. None of the ingredients in the product meets the criteria for being PBT or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances ...................... The product is a mixture, not a substance

3.2. Mixtures .......................... See section 16 for full text of hazard statements.

Active ingredients
Diflufenican .......................... Content: 41% by weight
CAS name ........................... 3-Pyridinecarboxamide, N-(2,4-difluorophenyl)-2-[3-(trifluoro-methyl)phenoxy]-
CAS no. ............................. 83164-33-4
IUPAC name .......................... 2',4'-Difluoro-2-(α,α,α-trifluoro-m-tolyloxy)nicotinanilide
ISO name/EU name ................. Diflufenican
<table>
<thead>
<tr>
<th>Material group</th>
<th>1225</th>
<th>EC no. (EINECS no.)</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>Lector Delta (DIFLUFENICAN 500 g/l + FLORASULAM 50 g/l SC)</td>
<td>EU index no.</td>
<td>616-032-00-9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Classification of the ingredient</td>
<td>Hazards to the aquatic environment, chronic: Category 3 (H412)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Structural formula</td>
<td>N-(2,6-Difluorophenyl)-8-fluoro-5-methoxy[1,2,4]triazolo[1,5-c]-pyrimidine-2-sulfonamide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CAS name</td>
<td>Florasulam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CAS no.</td>
<td>145701-23-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IUPAC name(s)</td>
<td>2',6',8-Trifluoro-5-methoxy[1,2,4]triazolo[1,5-c]pyrimidine-2-sulfonanilide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ISO name/EU name</td>
<td>Florasulam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EC no. (EINECS no.)</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EU index no.</td>
<td>613-230-00-7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Classification of the ingredient</td>
<td>Hazards to the aquatic environment, acute: Category 1 (H400) chronic: Category 1 (H410)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Structural formula</td>
<td>N-(2,6-Difluorophenyl)-8-fluoro-5-methoxy[1,2,4]triazolo[1,5-c]-pyrimidine-2-sulfonamide</td>
</tr>
</tbody>
</table>

**Reportable ingredients**

<table>
<thead>
<tr>
<th>Reportable ingredient</th>
<th>Content (% w/w)</th>
<th>CAS no.</th>
<th>EC no. (EINECS no.)</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium alkylnaphthalenesulphonate-formaldehyde condensate</td>
<td>2</td>
<td>577773-56-9</td>
<td>None</td>
<td>Eye Irrit. 2 (H319)</td>
</tr>
<tr>
<td>1,2-Benzisothiazol-3(2H)-one</td>
<td>0.01</td>
<td>2634-33-5</td>
<td>220-120-9</td>
<td>Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1A (H317) Aquatic Acute 1 (H400)</td>
</tr>
</tbody>
</table>

**SECTION 4: FIRST AID MEASURES**

4.1. Description of first aid measures

Inhalation ........................................... If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention
immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.

**Skin contact**
Immediately remove contaminated clothing and footwear. Flush skin with water. Wash with water and soap. See physician if any symptom develops.

**Eye contact**
Immediately rinse eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. See physician if irritation persists.

**Ingestion**
Let the exposed person rinse mouth and let him/her drink several glasses of water or milk, but not induce vomiting. If vomiting does occur, let him/her rinse mouth and drink fluids again. Get medical attention immediately.

4.2. **Most important symptoms and effects, both acute and delayed**
Not known. Poisoning is unlikely, unless large quantities are ingested. In acute toxicity tests on diflufenican, only non-specific signs of toxicity were observed.

4.3. **Indication of any immediate medical attention and special treatment needed**
Immediate medical attention is required in case of ingestion. It may be helpful to show this safety data sheet to physician.

**Note to physician**
A specific antidote against this substance is not known. Treatment is as for a general chemical. Gastric lavage and/or administration of activated charcoal can be considered. After decontamination, treatment of exposure should be directed at the control of symptoms and the clinical condition.

### SECTION 5: FIRE-FIGHTING MEASURES

5.1. **Extinguishing media**
Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.

5.2. **Special hazards arising from the substance or mixture**
The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as nitrogen oxides, hydrogen fluoride, carbon monoxide, carbon dioxide, sulphur dioxide and various fluorinated organic compounds.

5.3. **Advice for firefighters**
Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Firemen should wear self-contained breathing apparatus and protective clothing.

### SECTION 6: ACCIDENTAL RELEASE MEASURES
6.1. **Personal precautions, protective equipment and emergency procedures**

It is recommended to have a predetermined plan for the handling of spills. Empty, closable vessels for the collection of spills should be available.

In case of large spill (involving 10 tonnes of the product or more):
1. use personal protection equipment; see section 8
2. call emergency telephone no.; see section 1
3. alert authorities.

Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and rubber boots.

Stop the source of the spill immediately if safe to do so.

6.2. **Environmental precautions**

Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

6.3. **Methods and materials for containment and cleaning up**

It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. See GHS (Annex 4, Section 6).

Surface water drains should be covered if appropriate. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, hydrated lime, Fuller’s earth or other absorbent clays. Collect the contaminated absorbent in suitable containers. Clean area with much water and industrial detergent. Absorb wash liquid onto absorbent and transfer to suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and transferred to suitable containers.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

6.4. **Reference to other sections**

See subsection 8.2. for personal protection.
See section 13 for disposal.

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**SECTION 7: HANDLING AND STORAGE**

7.1. **Precautions for safe handling**

In an industrial environment it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. The material should be handled by mechanical means as much as possible. Adequate ventilation or local exhaust
ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8.

Remove contaminated clothing immediately. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and footwear. Take a shower, using water and soap. Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after each 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.

7.2. Conditions for safe storage, including any incompatibilities

The product is stable under normal conditions of warehouse storage. Keep in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

7.3. Specific end use(s) ..................

The product is a registered pesticide which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

To our knowledge, personal exposure limits have not been established for the active ingredients in this product. However, personal exposure limits defined by local regulations may exist and must be observed.

<table>
<thead>
<tr>
<th>Product</th>
<th>DNEL, systemic</th>
<th>PNEC, aquatic environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diflufenican</td>
<td>0.11 mg/kg bw/day</td>
<td>2.5 ng/l</td>
</tr>
<tr>
<td>Florasulam</td>
<td>0.05 mg/kg bw/day</td>
<td>62 ng/l</td>
</tr>
</tbody>
</table>

8.2. Exposure controls ......................

When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use
of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping systems non-hazardous before opening.

The precautions mentioned below are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well.

In cases of incidental high exposure, maximal personal protection equipment may be necessary, such as respirator, face mask, chemical resistant coveralls.

Respiratory protection

The product does not automatically present an airborne exposure concern during normal handling, but in the event of an accidental discharge of the material which produces a heavy vapour or mist, workers must put on officially approved respiratory protection equipment with a universal filter type including particle filter.

Protective gloves ......

Wear chemical resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton. The breakthrough times of these materials for the product are unknown, but it is expected that they will give adequate protection.

Eye protection ........

Wear safety glasses. It is recommended to have an eye wash fountain immediately available in the workplace when there is a potential for eye contact.

Other skin protection

Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of excessive or prolonged exposure, coveralls of barrier laminate may be required.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Opaque off-white liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Smell of mixed chemicals</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH</td>
<td>Undiluted: 4.46 at 25°C</td>
</tr>
<tr>
<td></td>
<td>1% dilution in water: 4.53 at 25°C</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not flammable. The flame is extinguished at 74°C in the Setaflash closed cup tester</td>
</tr>
</tbody>
</table>
Evaporation rate ........................... Not determined
Flammability (solid/gas) .............. Not applicable (liquid)
Upper /lower flammability or explosive limits ......................... Not determined
Vapour pressure .........................
  Diflufenican : $4.25 \times 10^{-6}$ Pa at 25°C
  $8.19 \times 10^{-6}$ Pa at 35°C
  Florasulam : $6.55 \times 10^{-3}$ Pa at 25°C
Vapour density ............................ Not determined
Relative density .......................... 1.22
Solubility(ies) ............................
  Solubility of diflufenican at 20°C in:
  ethyl acetate 67 - 80 g/l
  hexane < 10 g/l
  water < 0.05 mg/l at 25°C
  Solubility of florasulam at 20°C in:
  ethyl acetate 16 g/l
  n-heptane 0.036 g/l
  water 0.027 g/l at pH 4
  4.8 g/l at pH 7
  49 g/l at pH 9
Partition coefficient n-octanol/water
  Diflufenican : $\log K_{ow} = 4.9$
  Florasulam : $\log K_{ow} = 1.11$ at pH 3 and 25°C
  $\log K_{ow} = -1.10$ at pH 7 and 25°C
  $\log K_{ow} = -1.79$ at pH 10.0 and 25°C
Autoignition temperature .......... > 600°C if any
Decomposition temperature .......... Not determined
Viscosity ................................
  1446 mPa.s at 20°C
  1277 mPa.s at 40°C
Explosive properties ................. Not explosive
Oxidising properties ................... Not oxidising
9.2. Other information
Miscibility ............................. The product is miscible with water.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity ......................... To our knowledge, the product has no special reactivities.
10.2. Chemical stability .................. The product is stable during normal handling and storage at ambient temperatures.
10.3. Possibility of hazardous reactions None known.
10.4. Conditions to avoid ............... Heating of the product will evolve harmful and irritant vapours.
10.5. Incompatible materials ............. None known.
10.6. Hazardous decomposition products See subsection 5.2.
SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects  * = Based on available data, the classification criteria are not met.

**Product**

**Acute toxicity**

The product is not considered harmful by single exposure. * The acute toxicity is measured as:

**Route(s) of entry**

- **ingestion**  
  LD$_{50}$ oral, rat: > 5000 mg/kg (method OECD 425)

- **skin**  
  LD$_{50}$ dermal, rat: > 5000 mg/kg (method OECD 402)

- **inhalation**  
  LC$_{50}$ inhalation, rat: > 3.98 mg/l/4 h (method OECD 403)

**Skin corrosion/irritation**

Minimally irritating to skin (method OECD 404). *

**Serious eye damage/irritation**

Minimally irritating to eyes (method OECD 405). *

**Respiratory or skin sensitisation**

Not an allergenic skin sensitizer (method OECD 429). *

**Germ cell mutagenicity**

The product contains no ingredients known to be mutagenic. *

**Carcinogenicity**

The product contains no ingredients known to be carcinogenic. *

**Reproductive toxicity**

The product contains no ingredients found to have adverse effects on reproduction. *

**STOT – single exposure**

To our knowledge, no specific effects have been observed after single exposure. *

**STOT – repeated exposure**

The following is found for the active ingredient diflufenican:

- **Target organ**: no specific target organ
- **NOEL**: 8 - 8.7 mg/kg bw/day in a 13-week rat study. At this exposure reduced bodyweight gain was found (method OECD 408). *

**Aspiration hazard**

The product does not contain ingredients of a type known to present an aspiration pneumonia hazard. *

**Symptoms and effects, acute and delayed**

Not known. Poisoning is unlikely, unless large quantities are ingested. In acute toxicity tests on diflufenican only non-specific signs of toxicity were observed.

**Diflufenican**

**Toxicokinetics, metabolism and distribution**

Diflufenican is rapidly absorbed after oral administration. Distribution occurs preferentially to tissues with a high fat content. It is extensively metabolised and rapidly excreted.

**Acute toxicity**

The substance is not harmful by inhalation, in contact with skin or if swallowed. * The acute toxicity is measured as:

**Route(s) of entry**

- **ingestion**  
  LD$_{50}$ oral, rat: > 5000 mg/kg (5 studies)
<table>
<thead>
<tr>
<th>Material group</th>
<th>1225</th>
</tr>
</thead>
</table>
| **Product name** | **Lector Delta**  
(DIFLUFENICAN 500 g/l + FLORASULAM 50 g/l SC) |
| **Page** | 10 of 14 |
| **CVR No.** | DK 12 76 00 43 |

**Florasulam**

**Toxicokinetics, metabolism and distribution**
Florasulam is rapidly absorbed after oral intake. It is widely distributed in the body. Metabolism is minor and only partial. Excretion is rapid, within a few days. No indication of bioaccumulation is found.

**Acute toxicity**
Florasulam is not considered as harmful by inhalation, in contact with skin or if swallowed. * The acute toxicity is measured as:

<table>
<thead>
<tr>
<th>Route(s) of entry</th>
<th>LD₅₀, oral, rat: &gt; 5000 mg/kg (method OECD 425)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- skin</td>
<td>LD₅₀, dermal, rat: &gt; 2000 mg/kg (method OECD 402)</td>
</tr>
<tr>
<td>- inhalation</td>
<td>LC₅₀, inhalation, rat: &gt; 5.09 mg/l/4 h (method OECD 403)</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**
Not irritating to skin (method OECD 404). *

**Serious eye damage/irritation**
Not irritating to eyes (method OECD 405). *

**Respiratory or skin sensitisation**
Not a skin sensitizer (method OECD 429). *

**Sodium alkylnaphthalenesulphonate-formaldehyde condensate**

**Acute toxicity**
The substance is not considered harmful by single exposure. *

<table>
<thead>
<tr>
<th>Route(s) of entry</th>
<th>LD₅₀, oral, rat: &gt; 5000 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>- skin</td>
<td>LD₅₀, dermal, rat: not available</td>
</tr>
<tr>
<td>- inhalation</td>
<td>LC₅₀, inhalation, rat: not available</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**
May be slightly irritating to skin. *

**Serious eye damage/irritation**
Irritating to eyes.

**STOT – single exposure**
Inhalation of dust can cause irritation of airways. It is not clear if the criteria for classification are met.

**1,2-Benzisothiazol-3(2H)-one**

**Acute toxicity**
The substance is harmful by ingestion.

| Route(s) of entry | LD₅₀, oral, rat (male): 670 mg/kg  
LD₅₀, oral, rat (female): 784 mg/kg |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- ingestion</td>
<td></td>
</tr>
</tbody>
</table>
Material group  1225
Product name  Lector Delta (DIFLUFENICAN 500 g/l + FLORASULAM 50 g/l SC)  Page 11 of 14

(method OPPTS 870.1100, measured on 73% solution)
- skin  LD$_{50}$, dermal, rat: > 2000 mg/kg *
(method OPPTS 870.1200, measured on 73% solution)
- inhalation  LC$_{50}$, inhalation, rat: not available

Skin corrosion/irritation  Slightly irritating to skin (method OPPTS 870.2500).
Serious eye damage/irritation  Severely irritating to eyes (method OPPTS 870.2400).
Respiratory or skin sensitisation  Moderate dermal sensitizer to guinea pigs (method OPPTS 870.2600).
The substance appears to be significantly more sensitising to humans.

SECTION 12: ECOLOGICAL INFORMATION

12.1.  **Toxicity**  The product is highly toxic to many plant species. It is not considered as toxic to fish, aquatic invertebrates, soil macroorganisms, birds, mammals and insects. It may have short-term effects on soil microorganisms, but no significant long-term effects have been observed.

The following has been measured on the product:
- Fish  Rainbow trout (*Oncorhynchus mykiss*)  96-h LC$_{50}$: > 100 mg/l
- Invertebrates  Daphnids (*Daphnia magna*)  48-h EC$_{50}$: > 100 mg/l
- Algae  Green algae (*Desmodesmus subspicatus*)  72-h LC$_{50}$: 1.9 µg/l
- Plants  Duckweed (*Lemna minor*)  7-day EC$_{50}$: 0.027 mg/l
- Earthworms  *Eisenia fetida*  14-day LC$_{50}$: 1000 mg/kg dry soil
- Insects  Bees  48-h LD$_{50}$, oral: > 214 µg/bee
            48-h LD$_{50}$, contact: > 235 µg/bee

12.2.  **Persistence and degradability**  *Diflufenican* is not rapidly degraded in the environment or in wastewater treatment plants. Its primary half-life in soil can vary from several months to one year depending on circumstances.

*Florasulam* is not readily biodegradable. It is not persistent in aerobic soil or aquatic systems, but is degraded to its major degradate, N-(2,6-difluorophenyl)-8-fluoro-5-hydroxy-[1,2,4]triazolo[1,5-c]pyrimidine-2-sulfonamide, which in turn is more slowly biodegraded in soil or even stable in some aquatic systems, and more mobile in soil than florasulam. Degradation half-lives of florasulam vary with circumstances, from 2 to 18 days in aerobic soil. Degradation is mainly microbiological.

The product contains small amounts of other ingredients which are not readily biodegradable and may not be degradable in a waste water treatment plant.
12.3. **Bioaccumulative potential** ........ See section 9 for n-octanol/water partition coefficients.

*Diflufenican* has a potential to bioaccumulate. The bioconcentration factor was measured to be approx. 1500 for whole fish (rainbow trout). It was excreted within 14 days.

Due to its high solubility in water, *florasulam* does not bioaccumulate. Bioconcentration factor is < 2.21.

12.4. **Mobility in soil** .................... In the environment *diflufenican* is not mobile, but is readily absorbed by soil particles.

Under normal conditions *florasulam* is mobile in soil. It has a potential for leaching to groundwater.

12.5. **Results of PBT and vPvB assessment** ................ None of the ingredients meets the criteria for being PBT or vPvB.

12.6. **Other adverse effects** ............... Other relevant hazardous effects in the environment are not known.

**SECTION 13: DISPOSAL CONSIDERATIONS**

13.1. **Waste treatment methods** ........ Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste.

Disposal of waste and packagings must always be in accordance with all applicable local regulations.

Disposal of product .................... According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered. If this is not feasible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.

Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Disposal of packaging .................... It is recommended to consider possible ways of disposal in the following order:
1. Reuse or recycling should first be considered. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.
2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
3. Delivery of the packaging to a licensed service for disposal of hazardous waste.
4. Disposal in a landfill or burning in open air should only occur as a last resort. For disposal in a landfill containers should be emptied completely, rinsed and punctured to make them unusable for other
purposes. If burned, stay out of smoke.

SECTION 14: TRANSPORT INFORMATION

**ADR/RID/IMDG/IATA/ICAO classification**

14.1. **UN number** ......................... 3082
14.2. **UN proper shipping name** .......... Environmentally hazardous substance, liquid, n.o.s. (diflufenican and florasulam)
14.3. **Transport hazard class(es)** ........ 9
14.4. **Packing group** ....................... III
14.5. **Environmental hazards** ............. Marine pollutant
14.6. **Special precautions for user** ....... Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not discharge to the environment.
14.7. **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code** .................. The product is not transported in bulk by ship.

SECTION 15: REGULATORY INFORMATION

15.1. **Safety, health and environmental regulations/legislation specific for the substance or mixture** Seveso category (Dir. 2012/18/EU): dangerous for the environment. All ingredients are covered by EU chemical legislation.
15.2. **Chemical safety assessment** ........ A chemical safety assessment is not required to be included for this product.

SECTION 16: OTHER INFORMATION

Relevant changes in the safety data sheet ........................................ Minor corrections only.
List of abbreviations ......................
- **CAS** Chemical Abstracts Service
- **Dir.** Directive
- **DNEL** Derived No Effect Level
- **EC** European Community
- **EC50** 50% Effect Concentration
- **ECE50** 50% Effect Concentration based on growth
- **EINECS** European INventory of Existing Commercial Chemical Substances
- **GHS** Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013
- **IBC** International Bulk Chemical code
**Material group** 1225

**Product name** Lector Delta  
(DIFLUFENICAN 500 g/l + FLORASULAM 50 g/l SC)

| LC<sub>50</sub> | 50% Inhibition Concentration based on growth |
| ISO | International Organisation for Standardization |
| IUPAC | International Union of Pure and Applied Chemistry |
| LD<sub>50</sub> | 50% Lethal Dose |
| LOAEL | Lowest Observed Adverse Effect Level |
| MARPOL | Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution |
| NOEL | No Observed Effect Level |
| n.o.s. | Not otherwise specified |
| OECD | Organisation for Economic Cooperation and Development |
| OPPTS | Office of Prevention, Pesticides and Toxic Substances |
| PBT | Persistent, Bioaccumulative, Toxic |
| PNEC | Predicted No Effect Concentration |
| Reg. | Regulation |
| SC | Suspension Concentrate |
| STOT | Specific Target Organ Toxicity |
| US EPA | Environmental Protection Agency (USA) |
| vPvB | very Persistent, very Bioaccumulative |
| WHO | World Health Organisation |

**References**

Data measured on the product are unpublished company data. Data on ingredients are available from published literature and can be found several places.

**Method for classification**

Test data

**Used hazard statements**

- **H302** Harmful if swallowed.
- **H315** Causes skin irritation.
- **H317** May cause an allergic skin reaction.
- **H318** Causes serious eye damage.
- **H400** Very toxic to aquatic life.
- **H410** Very toxic to aquatic life with long lasting effects.
- **H412** Harmful to aquatic life with long lasting effects.
- **EUH208** Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.
- **EUH401** To avoid risks to human health and the environment, comply with the instructions of use

**Advice on training**

This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product vary and situations unforeseen by Cheminova A/S may exist. The user has to check the validity of the information under local circumstances.

**Prepared by**: Cheminova A/S / GHB