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

1.1 Product identifier: Mamut Herbicide - Suspension Concentrate (SC)
Contains 500g/L or 42.02% (w/w) of Diflufenican.

1.2 Relevant identified uses of the substance or mixture and uses advised against:
Relevant uses: Herbicide for agricultural use.
For professional user only.
Uses advised against: All uses not specified in this section or in section 7.3

1.3 Details of the supplier of the safety data sheet:
Ascenza Agro, SA
Avenida do Rio Tejo, Herdade das Praias
2910-440 Setúbal - Portugal - Setúbal
Phone.: +351265710100 - Fax: +351265710105
agroseguranca@ascenza.com
http://www.ascenza.com

1.4 Emergency telephone number: Local Poisons Information Centre

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:
CLP Regulation (EC) No 1272/2008:
Classification of this product has been carried out in accordance with CLP Regulation (EC) No 1272/2008.
Aquatic Acute 1: Hazardous to the aquatic environment, acute hazard, Category 1, H400
Aquatic Chronic 1: Hazardous to the aquatic environment, long-term hazard, Category 1, H410

2.2 Label elements:
CLP Regulation (EC) No 1272/2008:
Warning

Hazard statements:
Aquatic Chronic 1: H410 - Very toxic to aquatic life with long lasting effects
Precautionary statements:
P101: If medical advice is needed, have product container or label at hand
P102: Keep out of reach of children
P270: Do not eat, drink or smoke when using this product
P280: Wear protective gloves/protective clothing/eye protection/face protection
P501: Dispose of the contents/containers in accordance with the current legislation on waste treatment

Supplementary information:
EUH401: To avoid risks to human health and the environment, comply with the instructions for use

2.3 Other hazards:
Product fails to meet PBT/vPvB criteria

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:
- CONTINUED ON NEXT PAGE -
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

3.2 Mixture:

Chemical description: Organic compounds

Components:

In accordance with Annex II of Regulation (EC) No 1907/2006 (point 3), the product contains:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Chemical name/Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 83164-33-4</td>
<td>Diflufenican (ISO)⁽¹⁾</td>
<td>42.02 % (*)</td>
</tr>
<tr>
<td>EC: --</td>
<td>Regulation 1272/2008</td>
<td></td>
</tr>
<tr>
<td>Index: 616-032-00-9</td>
<td>Aquatic Chronic 3: H412</td>
<td></td>
</tr>
<tr>
<td>REACH: (i)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| CAS: 2634-33-5 | 1,2-benzisothiazol-3(2H)-one⁽¹⁾                  | <1 %          |
| EC: 220-120-9  | Regulation 1272/2008                             |               |
| Index: 613-088-00-6 | Aquatic Acute 1: H400; Eye Dam. 1: H318; Skin Irrit. 2: H315; Skin Sens. 1: H317 - Danger |
| REACH: Not available |                                                  |               |

⁽¹⁾ Substances presenting a health or environmental hazard which meet criteria laid down in Regulation (EU) No. 2015/830

To obtain more information on the hazards of the substances consult sections 8, 11, 12, 15 and 16.

Other information:

<table>
<thead>
<tr>
<th>Identification</th>
<th>M-factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-benzisothiazol-3(2H)-one</td>
<td>Acute: 10</td>
</tr>
<tr>
<td>CAS: 2634-33-5 EC: 220-120-9</td>
<td>Chronic: 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identification</th>
<th>Specific concentration limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-benzisothiazol-3(2H)-one</td>
<td>% (w/w) &gt;=0,05: Skin Sens. 1 - H317</td>
</tr>
<tr>
<td>CAS: 2634-33-5 EC: 220-120-9</td>
<td>(*) Substance considered registered under Article 15 (1) of Regulation 1907/2006;</td>
</tr>
<tr>
<td>(ii) Substance considered as registered under Article 15 (2) of Regulation (EC) No 1907/2006;</td>
<td></td>
</tr>
<tr>
<td>(iii) Substance exempted from registration under Article 2 (9) of Regulation 1907/2006;</td>
<td></td>
</tr>
<tr>
<td>(iv) Substance exempted from registration under Article 2 (7) (a) of Regulation (EC) No 1907/2006;</td>
<td></td>
</tr>
<tr>
<td>(v) Substance exempted from registration under Article 6 (1) of Regulation (EC) No 1907/2006;</td>
<td></td>
</tr>
<tr>
<td>(vi) Substance exempted from registration under Article 2 (7) (b) of Regulation (EC) No 1907/2006;</td>
<td></td>
</tr>
<tr>
<td>(vii) Substance exempted from registration under Article 2 (7) (c) of Regulation (EC) No 1907/2006;</td>
<td></td>
</tr>
<tr>
<td>(*) Equivalent to 500g/L of Diflufenican</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or if necessary shower the affected person thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

By eye contact:

Rinse eyes thoroughly with water for at least 15 minutes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case removal could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS for the product.

By ingestion/aspiration:

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

4.2 Most important symptoms and effects, both acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.
## SECTION 4: FIRST AID MEASURES (continued)

**Diffufenican:**
Ingestion - gastrointestinal disorder: nausea, abdominal pain, vomiting, diarrhoea; headache; sleepiness. Inhalation – respiratory problems; cough, dyspnoea, increase in bronchial and nose secretions. Contact – irritation of the eyes, skin and mucous; watering of eyes; rhinitis, conjunctivitis; contact dermatitis.

### 4.3 Indication of any immediate medical attention and special treatment needed:
Provide supportive care and symptomatic treatment. If swallowed induce vomiting or provide a gastric wash, in case victim is conscious; administrate activated charcoal or saline laxative (type: sodium or magnesium sulphate or similar). Specific antidote does not exist.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing media:
Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems. IT IS NOT RECOMMENDED to use tap water as an extinguishing agent.

### 5.2 Special hazards arising from the substance or mixture:
As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

### 5.3 Advice for firefighters:
Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit, ...).

Additional provisions:
Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Eliminate all sources of ignition. In case of fire, cool the storage containers and tanks for products susceptible to combustion, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures:
Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

### 6.2 Environmental precautions:
Avoid at all cost any type of spillage into an aqueous medium. Contain the product absorbed appropriately in hermetically sealed containers. Notify the relevant authority in case of exposure to the general public or the environment.

### 6.3 Methods and material for containment and cleaning up:
It is recommended:
Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

### 6.4 Reference to other sections:
See sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling:
A. - Precautions for safe manipulation
Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B. - Technical recommendations for the prevention of fires and explosions
Product is non-flammable under normal conditions of storage, handling and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.
SECTION 7: HANDLING AND STORAGE (continued)

C.- Technical recommendations to prevent ergonomic and toxicological risks
   Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks
   Due to the danger of this product for the environment it is recommended to use it within an area containing contamination control barriers in case of spillage, as well as having absorbent material in close proximity.

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage
   Maximum time: 24 Months

B.- General conditions for storage
   Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):
   Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:
(Diflufenican): ADI: 0.2 mg/kg of b.w/day; AOEL: 0.11 mg/kg of b.w/day.

Substances whose occupational exposure limits have to be monitored in the workplace
There are no occupational exposure limits for the substances contained in the product

DNEL (Workers):
Non-applicable

DNEL (General population):
Non-applicable

PNEC:
Non-applicable

8.2 Exposure controls:

A.- General security and hygiene measures in the work place
   As a preventative measure it is recommended to use basic Personal Protective Equipment, with the corresponding <<CE marking>>. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1.
   All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Diagram]</td>
<td>Filter mask for gases and vapours</td>
<td>CAT III</td>
<td>EN 405:2001+A1:2009 EN 140:1998/AC:1999</td>
<td>Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment.</td>
</tr>
</tbody>
</table>

C.- Specific protection for the hands

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
</table>

"As the product is a mixture of several substances, the resistance of the glove material can not be predicted in advance with total reliability and has therefore to be checked prior to the application"

D.- Ocular and facial protection

- CONTINUED ON NEXT PAGE -
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Panoramic glasses against splash/projections.</td>
<td>EN 166:2001</td>
<td>Clean daily and disinfect periodically according to the manufacturer’s instructions. Use if there is a risk of splashing.</td>
</tr>
<tr>
<td>E. Body protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anti-slip work shoes</td>
<td></td>
<td>EN ISO 20345:2011</td>
<td>Replace before any evidence of deterioration. For periods of prolonged exposure to the product for professional/industrial users CE III is recommended, in accordance with the regulations in EN ISO 20345:2011 y EN 13832-2:2006, EN 13832-3:2006</td>
</tr>
</tbody>
</table>

F. Additional emergency measures

<table>
<thead>
<tr>
<th>Emergency measure</th>
<th>Standards</th>
<th>Emergency measure</th>
<th>Standards</th>
</tr>
</thead>
</table>

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

Volatile organic compounds:

With regard to Directive 2010/75/EU, this product has the following characteristics:

- V.O.C. (Supply): 0,02 % weight
- V.O.C. density at 20 ºC: Non-applicable
- Average carbon number: 12
- Average molecular weight: 170 g/mol

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

**Appearance:**
- Physical state at 20 ºC: Liquid
- Appearance: Opaque
- Colour: Magnolia
- Odour: Incaracterístico
- Odour threshold: Non-applicable *

**Volutility:**
- Boiling point at atmospheric pressure: Non-applicable *
- Vapour pressure at 20 ºC: Non-applicable *
- Vapour pressure at 50 ºC: Non-applicable *
- Evaporation rate at 20 ºC: Non-applicable *

**Product description:**
- Density at 20 ºC: Non-applicable *

*CONTINUED ON NEXT PAGE*
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative density at 20 ºC:</td>
<td>1.19</td>
</tr>
<tr>
<td>Dynamic viscosity at 20 ºC:</td>
<td>1618.29-351.68 mPas (20ºC); 781.51-351.68 mPas (40ºC)</td>
</tr>
<tr>
<td>Kinematic viscosity at 20 ºC:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Kinematic viscosity at 40 ºC:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Concentration:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>pH:</td>
<td>7.13 (1% aqueous dilution); 7.69 (neat formulation)</td>
</tr>
<tr>
<td>Vapour density at 20 ºC:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Partition coefficient n-octanol/water 20 ºC:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Solubility in water at 20 ºC:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Solubility properties:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Melting point/freezing point:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Explosive properties:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Oxidising properties:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Flammability:</td>
<td></td>
</tr>
<tr>
<td>Flash Point:</td>
<td>&gt;100ºC</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Autoignition temperature:</td>
<td>No cold or hot flame were observed at 210, 250 or 278 º C</td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Explosive:</td>
<td></td>
</tr>
<tr>
<td>Lower explosive limit:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Upper explosive limit:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>9.2 Other information:</td>
<td></td>
</tr>
<tr>
<td>Surface tension at 20 ºC:</td>
<td>40.32 mN/m</td>
</tr>
<tr>
<td>Refraction index:</td>
<td>Non-applicable *</td>
</tr>
</tbody>
</table>

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:
No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:
Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:
Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:
Applicable for handling and storage at room temperature:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Shock and friction</th>
<th>Contact with air</th>
<th>Increase in temperature</th>
<th>Sunlight</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

- CONTINUED ON NEXT PAGE -
SECTION 10: STABILITY AND REACTIVITY (continued)

10.5 Incompatible materials:

<table>
<thead>
<tr>
<th>Acids</th>
<th>Water</th>
<th>Oxidising materials</th>
<th>Combustible materials</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid strong acids</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Avoid alkalis or strong bases</td>
</tr>
</tbody>
</table>

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than the recommended occupational exposure limits, adverse effects on health may result, depending on the means of exposure:

A- Ingestion (acute effect):
- Acute toxicity: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met. However, it does contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):
- Acute toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):
- Contact with the skin: Based on available data, the classification criteria are not met. However, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: Based on available data, the classification criteria are not met. However, it does contain substances classified as dangerous for this effect. For more information see section 3.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):
- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.
  - IARC: Non-applicable
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:
- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met. However, it contains substances classified as dangerous with sensitising effects. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:
- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

Other information:
SECTION 11: TOXICOLOGICAL INFORMATION (continued)

**Acute toxicity (Diflufenican 500SC):**
- Acute Oral LD₅₀: > 2000 mg/kg b.w. (Rats)
- Acute Dermal LD₅₀: > 2000 mg/kg b.w. (Rats)
- Acute Inhalation LC₅₀ (4h): NA

**Acute Effects (Diflufenican 500SC):**
- Skin corrosion/irritation: Not irritant (Rabbit)
- Serious eye damage/irritation: Slightly irritant (Rabbit)
- Respiratory sensitisation: No information available
- Skin sensitisation: Not a sensitizer (Guinea pig)

**Acute Effects (Diflufenican):**
- Skin corrosion/irritation: Not irritant
- Serious eye damage/irritation: Slightly irritant (Rabbit)
- Respiratory sensitisation: No information available
- Skin sensitisation: Not a sensitizer (Guinea pig)

**Chronic effects (Diflufenican):**
- Mutagenicity: Not observed
- Carcinogenicity: Not observed
- Reproductive toxicity: Not observed
- STOT- single exposure: Not demonstrated
- STOT- repeated exposure: Not demonstrated
- Aspiration hazard: No information available

**Specific toxicology information on the substances:**

<table>
<thead>
<tr>
<th>Identification</th>
<th>Acute toxicity</th>
<th>Genus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diflufenican (ISO)</td>
<td>LD₅₀ oral</td>
<td>Rat</td>
</tr>
<tr>
<td>CAS: 83164-33-4</td>
<td>&gt;5000 mg/kg b.w.</td>
<td></td>
</tr>
<tr>
<td>EC: --</td>
<td>LD₅₀ dermal</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td>&gt;2000 mg/kg b.w.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC₅₀ inhalation</td>
<td>Guinea Pig</td>
</tr>
<tr>
<td></td>
<td>&gt;5.12 mg/L of air</td>
<td></td>
</tr>
<tr>
<td>1,2-benzenothiazol-(3(2H)-one</td>
<td>LD₅₀ oral</td>
<td>Rat</td>
</tr>
<tr>
<td>CAS: 2634-33-5</td>
<td>500 mg/kg</td>
<td></td>
</tr>
<tr>
<td>EC: 220-120-9</td>
<td>LD₅₀ dermal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC₅₀ inhalation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;5 mg/L</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION

**12.1 Toxicity:**

<table>
<thead>
<tr>
<th>Identification</th>
<th>Acute toxicity</th>
<th>Species</th>
<th>Genus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diflufenican (ISO)</td>
<td>LC₅₀</td>
<td>0.0985 mg/L (96 h)</td>
<td>Carp</td>
</tr>
<tr>
<td>CAS: 83164-33-4</td>
<td>EC₅₀</td>
<td>&gt;0.24 μg/L (48h)</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>EC: --</td>
<td>EC₅₀</td>
<td>0.00045 mg/L (72h)</td>
<td>Scenedesmus subspicatus</td>
</tr>
<tr>
<td>1,2-benzenothiazol-(3(2H)-one</td>
<td>LC₅₀</td>
<td>0.1 - 1 mg/L (96 h)</td>
<td>Fish</td>
</tr>
<tr>
<td>CAS: 2634-33-5</td>
<td>EC₅₀</td>
<td>0.1 - 1 mg/L</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>EC: 220-120-9</td>
<td>EC₅₀</td>
<td>0.1 - 1 mg/L</td>
<td>Scenedesmus subspicatus</td>
</tr>
</tbody>
</table>

- CONTINUED ON NEXT PAGE -
SECTION 12: ECOLOGICAL INFORMATION (continued)

**Acute toxicity (Diflufenican 500SC):**
- Fish acute LC₅₀ (96 h): > 50 mg/l (Rainbow trout)
- Aquatic invertebrates acute EC₅₀ (48 h): > 500 mg/l (Daphnia magna)
- Algae acute Er₅₀ (72 h): 0.0009 mg/l f.p. (Selenastrum capricornutum), 0.0009 mg/l f.p. (Scenedesmus capricornutum), 0.000720 mg/l f.p. (Scenedesmus subspicatus)
- Birds acute Oral LD₅₀: NA
- Bee oral LD₅₀: > 100 μg/bee
- Bee contact LD₅₀: > 100 μg/bee
- Aquatic plants EC₅₀ (7 d): NA

**Acute toxicity (Diflufenican):**
- Birds acute Oral LD₅₀: > 32150 mg/kg b.w.
- Bee oral LD₅₀: > 112.3 μg/bee
- Bee contact LD₅₀: > 100 μg/bee
- Aquatic plants EC₅₀ (14 d): 0.039 mg/l (Lemna gibba)

**Chronic toxicity (Diflufenican):**
- Fish chronic NOEC (28 d): 0.015 μg/l (Trota)
- Aquatic invertebrates chronic NOEC (21 d): 0.052 μg/l (Daphnia magna)
- Algae chronic NOEC (72h): 0.0001 mg/l (Scenesdesmus subspicatus)

12.2 Persistence and degradability:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Degradability</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-benzisothiazol-3(2H)-one</td>
<td>BOD₅</td>
<td>Non-applicable</td>
</tr>
<tr>
<td>CAS: 2634-33-5</td>
<td>COD</td>
<td>Non-applicable</td>
</tr>
<tr>
<td>EC: 220-120-9</td>
<td>BOD₅/COD</td>
<td>Non-applicable</td>
</tr>
</tbody>
</table>

**Diflukenican:**
- Soil: Persistent in soil. Typical DT₅₀: 180 d; Lab DT₅₀: 141.8 d; Field DT₅₀: 315 d.
- Water: Slow chemical degradation in water-sediment systems, DT₅₀: 175 d.

12.3 Bioaccumulative potential:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Bioaccumulation potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-benzisothiazol-3(2H)-one</td>
<td>BCF</td>
</tr>
<tr>
<td>CAS: 2634-33-5</td>
<td>Pow Log 1.45</td>
</tr>
<tr>
<td>EC: 220-120-9</td>
<td>Potential Low</td>
</tr>
</tbody>
</table>

**Diflukenican:** High bioaccumulation potential. Log Pow: 4.2 (20ºC). BCF: 1276.

12.4 Mobility in soil:

**Diflukenican:** Low mobility to immobile in soil.

12.5 Results of PBT and vPvB assessment:

Product fails to meet PBT/vPvB criteria

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Waste class (Regulation (EU) No 1357/2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>02 01 08*</td>
<td>agrochemical waste containing hazardous substances</td>
<td>Dangerous</td>
</tr>
</tbody>
</table>

Type of waste (Regulation (EU) No 1357/2014):

HP14 Ecotoxic

Waste management (disposal and evaluation):

- CONTINUED ON NEXT PAGE -
SECTION 13: DISPOSAL CONSIDERATIONS (continued)

Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC). As under 15 01 (2014/955/EC) of the code and in case the container has been in direct contact with the product, it will be processed in the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See paragraph 6.2.

Regulations related to waste management:
In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated

SECTION 14: TRANSPORT INFORMATION

Note 1: ADR/ RID/ IMDG/ IATA Limited Quantities Exemption: Combined packages with a total weight not greater than 30 kg are exempt provided each individual package do not exceed 5 Lt. Note 2: Special Provision 375 of the ADR (2019) (for Environmentally Hazardous Substances, which do not meet the criteria to be included in other classes): When carried in single or combination packages of 5L or 5kg per single or inner packaging or less are not subject to ADR provided packaging meets general requirements (4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8). Special Provision 2.10.2.7 of IMDG (2016) - Marine pollutants packaged in single or combination packaging containing a net quantity per single or inner packaging of 5 lt or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of this Code relevant to marine pollutants provided the packaging meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class all provisions of this Code relevant to any additional hazards continue to apply. Special Provision A197 of IATA (2019) (for Environmentally Hazardous Substances, which do not meet the criteria to be included in other classes): These substances when transported single or combination packaging of 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packaging meet general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Transport of dangerous goods by land:
With regard to ADR 2019 and RID 2019:

14.1 UN number: UN3082
14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,2-benzisothiazol-3(2H)-one)
14.3 Transport hazard class(es): 9
14.4 Packing group: III
14.5 Environmental hazards: Yes
14.6 Special precautions for user Special regulations: 274, 335, 375, 601
Tunnel restriction code: Non-applicable
Physico-Chemical properties: see section 9
Limited quantities: 5 L
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: Non-applicable

Transport of dangerous goods by sea:
With regard to IMDG 38-16:

14.1 UN number: UN3082
14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,2-benzisothiazol-3(2H)-one)
14.3 Transport hazard class(es): 9
14.4 Packing group: III
14.5 Environmental hazards: Yes
14.6 Special precautions for user Special regulations: 335, 969, 274
EmS Codes: F-A, S-F
Physico-Chemical properties: see section 9
Limited quantities: 5 L
Segregation group: Non-applicable
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: Non-applicable

Transport of dangerous goods by air:
With regard to IATA/ICAO 2019:

- CONTINUED ON NEXT PAGE -
**SECTION 14: TRANSPORT INFORMATION (continued)**

<table>
<thead>
<tr>
<th>14.1 UN number:</th>
<th>UN3082</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 UN proper shipping name:</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,2-benzisothiazol-3(2H)-one)</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es):</td>
<td>9</td>
</tr>
<tr>
<td>Labels:</td>
<td>9</td>
</tr>
<tr>
<td>14.4 Packing group:</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Environmental hazards:</td>
<td>Yes</td>
</tr>
<tr>
<td>14.6 Special precautions for user Physico-Chemical properties:</td>
<td>see section 9</td>
</tr>
<tr>
<td>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:</td>
<td>Non-applicable</td>
</tr>
</tbody>
</table>

**SECTION 15: REGULATORY INFORMATION**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

- Regulation (EC) No 528/2012: contains a preservative to protect the initial properties of the treated article. Contains 1,2-benzisothiazol-3(2H)-one.
- Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): Non-applicable
- Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Non-applicable
- Regulation (EC) No 1005/2009, about substances that deplete the ozone layer: Non-applicable
- Article 95, REGULATION (EU) No 528/2012: 1,2-benzisothiazol-3(2H)-one (Product-type 2, 6, 9, 10, 11, 12, 13)
- REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable

**Seveso III:**

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Lower-tier requirements</th>
<th>Upper-tier requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td></td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>

Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII REACH, etc.):

- Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as a basis for conducting workplace-specific risk assessments in order to establish the necessary risk prevention measures for the handling, use, storage and disposal of this product.

Other legislation:

The product could be affected by sectorial legislation

Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products

15.2 Chemical safety assessment:

The supplier has not carried out evaluation of chemical safety.

**SECTION 16: OTHER INFORMATION**

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (Regulation (EC) No 2015/830)

Modifications related to the previous Safety Data Sheet which concerns the ways of managing risks.:

- Non-applicable

Texts of the legislative phrases mentioned in section 2:

H410: Very toxic to aquatic life with long lasting effects
H400: Very toxic to aquatic life

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3
## CLP Regulation (EC) No 1272/2008:
- Acute Tox. 4: H302 - Harmful if swallowed
- Aquatic Acute 1: H400 - Very toxic to aquatic life
- Aquatic Chronic 3: H412 - Harmful to aquatic life with long lasting effects
- Eye Dam. 1: H318 - Causes serious eye damage
- Skin Irrit. 2: H315 - Causes skin irritation
- Skin Sens. 1: H317 - May cause an allergic skin reaction

## Advice related to training:
Minimal training is recommended in order to prevent industrial risks for staff using this product and to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

## Principal bibliographical sources:
- http://echa.europa.eu
- http://eur-lex.europa.eu

## Abbreviations and acronyms:
- ADR: European agreement concerning the international carriage of dangerous goods by road
- IMDG: International maritime dangerous goods code
- IATA: International Air Transport Association
- ICAO: International Civil Aviation Organisation
- COD: Chemical Oxygen Demand
- BOD5: 5-day biochemical oxygen demand
- BCF: Bioconcentration factor
- LD50: Lethal Dose 50
- LC50: Lethal Concentration 50
- EC50: Effective concentration 50
- Log-POW: Octanol-water partition coefficient
- Koc: Partition coefficient of organic carbon

## Other information:
Content review: The sections / sub sections marked with (➢) were changed with relevant information, from the previous version.

Cod.: PF-556-C