SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: Abamectin / Fluazuron Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture: Veterinary product

1.3 Details of the supplier of the safety data sheet

Company: MSD
Shotton Lane
NE23 3JU Cramlington NU - Great Britain
Telephone: 44 1 670 59 30 00
Telefax: 908-735-1496
E-mail address of person responsible for the SDS: EHSDATASTEWARD@msd.com

1.4 Emergency telephone number

1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3
Acute toxicity, Category 4
Skin irritation, Category 2
Eye irritation, Category 2
Skin sensitisation, Category 1
Reproductive toxicity, Category 1B
Specific target organ toxicity - single exposure, Category 3
Specific target organ toxicity - single exposure, Category 3
Specific target organ toxicity - repeated exposure, Category 2
Short-term (acute) aquatic hazard, Category 1
Long-term (chronic) aquatic hazard, Category 1

H226: Flammable liquid and vapour.
H332: Harmful if inhaled.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H317: May cause an allergic skin reaction.
H360D: May damage the unborn child.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H373: May cause damage to organs through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)
Hazard pictograms : 

Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H360D May damage the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:
P201 Obtain special instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P391 Collect spillage.

Hazardous components which must be listed on the label:
Propan-2-ol
N-Methyl-2-pyrrolidone
7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate
Abamectin (combination of avermectin B1a and avermectin B1b)

Additional Labelling
Restricted to professional users.

2.3 Other hazards
Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
</table>

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**General advice**: In the case of accident or if you feel unwell, seek medical advice immediately.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS Number</th>
<th>Category</th>
<th>Hazard Class</th>
<th>Hazard Code</th>
<th>M-Factor (Acute aquatic toxicity)</th>
<th>M-Factor (Chronic aquatic toxicity)</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propan-2-ol</td>
<td>67-63-0 200-661-7 603-117-00-0</td>
<td>Flam. Liq.2; H225 Eye Irrit.2; H319 STOT SE3; H336</td>
<td>&gt;= 30 - &lt; 50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-Methyl-2-pyrrolidone</td>
<td>872-50-4 212-828-1 606-021-00-7</td>
<td>Skin Irrit.2; H315 Eye Irrit.2; H319 Repr.1B; H360D STOT SE3; H335</td>
<td>&gt;= 30 - &lt; 50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluazuron</td>
<td>86811-58-7</td>
<td>Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td>&gt;= 2,5 - &lt; 10</td>
<td>M-Factor (Acute aquatic toxicity): 1.000 M-Factor (Chronic aquatic toxicity): 1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abamectin (combination of avermectin B1a and avermectin B1b)</td>
<td>71751-41-2 606-143-00-0</td>
<td>Acute Tox.2; H300 Acute Tox.1; H330 Acute Tox.3; H311 Repr.2; H361fd STOT RE1; H372 Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td>&gt;= 1 - &lt; 2,5</td>
<td>M-Factor (Acute aquatic toxicity): 10.000 M-Factor (Chronic aquatic toxicity): 10.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate</td>
<td>2386-87-0 219-207-4</td>
<td>Skin Sens.1; H317</td>
<td>&gt;= 1 - &lt; 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>128-37-0 204-881-4</td>
<td>Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td>&gt;= 0,1 - &lt; 0,25</td>
<td>M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.
Protection of first-aiders: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

If inhaled: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

In case of skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

In case of eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.

If swallowed: If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Risks: Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness. May damage the unborn child. May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Abamectin / Fluazuron Formulation

Version 4.3 Revision Date: 23.03.2020 SDS Number: 803738-00014 Date of last issue: 13.09.2019 Date of first issue: 12.07.2016

Unsuitable extinguishing media: High volume water jet

5.2 Special hazards arising from the substance or mixture
Specific hazards during firefighting: Do not use a solid water stream as it may scatter and spread fire. Flash back possible over considerable distance. Vapours may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides Nitrogen oxides (NOx) Chlorine compounds Fluorine compounds

5.3 Advice for firefighters
Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal precautions: Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions
Environmental precautions: Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up
Methods for cleaning up: Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. For large spills, provide dyeing or other appropriate containment to keep material from spreading. If dyed material can
be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections
See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSOAL PROTECTION section.

Local/Total ventilation:
If sufficient ventilation is unavailable, use with local exhaust ventilation.
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Advice on safe handling:
Do not get on skin or clothing.
Do not breathe vapours or spray mist.
Do not swallow.
Do not get in eyes.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
Non-sparking tools should be used.
Keep container tightly closed.
Already sensitised individuals should consult their physician regarding working with respiratory irritants or sensitisers.

Hygiene measures:
If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:
Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.
Abamectin / Fluazuron Formulation

Advice on common storage: Do not store with the following product types:
- Strong oxidizing agents
- Organic peroxides
- Flammable solids
- Pyrophoric liquids
- Pyrophoric solids
- Self-heating substances and mixtures
- Substances and mixtures, which in contact with water, emit flammable gases
- Explosives
- Gases

7.3 Specific end use(s)
Specific use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propan-2-ol</td>
<td>67-63-0</td>
<td>TWA</td>
<td>100 ppm 245 mg/m3</td>
<td>FOR-2011-12-06-1358</td>
</tr>
<tr>
<td>N-Methyl-2-pyrrolidone</td>
<td>872-50-4</td>
<td>TWA</td>
<td>5 ppm 20 mg/m3</td>
<td>FOR-2011-12-06-1358</td>
</tr>
</tbody>
</table>

Further information: The EU has set an indicative limit value for this substance, Substances considered to be reprotoxic, Chemicals that can be absorbed through the skin.

| | STEL | 20 ppm 80 mg/m3 | FOR-2011-12-06-1358 |
| | TWA | 10 ppm 40 mg/m3 | 2009/161/EU |

Further information: Short Term Value is a value for the average concentration of a chemical in the breathing zone of a worker not to be exceeded in a specified reference period. The reference period is 15 minutes if no other reference periods are given. The EU has set an indicative limit value for this substance, Substances considered to be reprotoxic, Chemicals that can be absorbed through the skin.

| | STEL | 20 ppm 80 mg/m3 | 2009/161/EU |
| Fluazuron | 86811-58-7 | TWA | 60 µg/m3 (OEB 3) | Internal |
| | Wipe limit | 600 µg/100cm² | Internal |
| Abamectin (combination of avermectin B1a and avermectin B1b) | 71751-41-2 | TWA | 30 µg/m3 (OEB 3) | Internal |

| | Wipe limit | 300 µg/100 cm² | Internal |
### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Methyl-2-pyrrolidone</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>14,4 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>40 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>4,8 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>3,6 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>4,5 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>2,4 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>0,85 mg/kg bw/day</td>
</tr>
<tr>
<td>7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>0,18 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>0,18 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>0,05 mg/kg bw/day</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>500 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>888 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>89 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>319 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>26 mg/kg bw/day</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>3,5 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Dermal</td>
<td>Long-term systemic effects</td>
<td>0,5 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>0,86 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Dermal</td>
<td>Long-term systemic effects</td>
<td>0,25 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>0,25 mg/kg bw/day</td>
</tr>
</tbody>
</table>

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Methyl-2-pyrrolidone</td>
<td>Workers</td>
<td>Inhalation</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>Workers</td>
<td>Inhalation</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>Workers</td>
<td>Inhalation</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Dermal</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Dermal</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
</tr>
</tbody>
</table>
N-Methyl-2-pyrrolidone | Fresh water | 0.25 mg/l
| Freshwater - intermittent | 5 mg/l
| Marine water | 0.025 mg/l
| Sewage treatment plant | 10 mg/l
| Fresh water sediment | 1.09 mg/kg dry weight (d.w.)
| Marine sediment | 1.09 mg/kg dry weight (d.w.)
| Soil | 0.07 mg/kg dry weight (d.w.)

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate | Fresh water | 0.024 mg/l
| Marine water | 0.0024 mg/l
| Intermittent use/release | 0.24 mg/l
| Sewage treatment plant | 19.5 mg/l
| Fresh water sediment | 0.211 mg/kg
| Marine sediment | 0.0211 mg/kg
| Soil | 0.0282 mg/kg

Propan-2-ol | Fresh water | 140.9 mg/l
| Marine water | 140.9 mg/l
| Intermittent use/release | 140.9 mg/l
| Sewage treatment plant | 2251 mg/l
| Fresh water sediment | 552 mg/kg dry weight (d.w.)
| Marine sediment | 552 mg/kg dry weight (d.w.)
| Soil | 28 mg/kg dry weight (d.w.)

Oral (Secondary Poisoning) | 160 mg/kg food

2,6-Di-tert-butyl-p-cresol | Fresh water | 0.199 µg/l
| Intermittent use/release | 0.02 µg/l
| Marine water | 0.02 µg/l
| Sewage treatment plant | 0.17 mg/l
| Fresh water sediment | 0.0996 mg/kg dry weight (d.w.)
| Marine sediment | 0.00996 mg/kg dry weight (d.w.)
| Soil | 0.04769 mg/kg dry weight (d.w.)

Oral (Secondary Poisoning) | 8.33 mg/kg food

8.2 Exposure controls

Engineering measures

Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).
Minimize open handling.

**Personal protective equipment**

**Eye protection**
- Wear safety glasses with side shields or goggles.
- If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate 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.

**Hand protection**

- **Material**: Chemical-resistant gloves
- **Remarks**: Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.

**Skin and body protection**

- Work uniform or laboratory coat.
- Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.
- Use appropriate degowning techniques to remove potentially contaminated clothing.

**Respiratory protection**

- If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
- Equipment should conform to NS EN 14387
- **Filter type**: Combined particulates and organic vapour type (A-P)

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

- **Appearance**: liquid
- **Colour**: No data available
- **Odour**: No data available
- **Odour Threshold**: No data available
- **pH**: No data available
- **Melting point/freezing point**: No data available
- **Initial boiling point and boiling range**: No data available
- **Flash point**: 28 °C
- **Evaporation rate**: No data available
- **Flammability (solid, gas)**: Not applicable
- **Upper explosion limit / Upper flammability limit**: No data available
- **Lower explosion limit / Lower flammability limit**: No data available
- **Vapour pressure**: No data available
Relative vapour density : No data available
Relative density : No data available
Density : No data available
Solubility(ies)
   Water solubility : No data available
   Partition coefficient: n-octanol/water : Not applicable
   Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity
   Viscosity, kinematic : No data available
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information
Flammability (liquids) : Not applicable
Molecular weight : No data available
Particle size : Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity
Not classified as a reactivity hazard.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions : Flammable liquid and vapour.
Vapours may form explosive mixture with air.
Can react with strong oxidizing agents.

10.4 Conditions to avoid
Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials
Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products
No hazardous decomposition products are known.
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure:
- Inhalation
- Skin contact
- Ingestion
- Eye contact

Acute toxicity
Harmful if inhaled.

Product:

**Acute oral toxicity**
- Acute toxicity estimate: > 2.000 mg/kg
  - Method: Calculation method

**Acute inhalation toxicity**
- Acute toxicity estimate: 2.06 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Method: Calculation method

**Acute dermal toxicity**
- Acute toxicity estimate: > 2.000 mg/kg
  - Method: Calculation method

Components:

**Propan-2-ol:**

- **Acute oral toxicity**: LD50 (Rat): > 5.000 mg/kg

- **Acute inhalation toxicity**: LC50 (Rat): > 25 mg/l
  - Exposure time: 6 h
  - Test atmosphere: vapour

- **Acute dermal toxicity**: LD50 (Rabbit): > 5.000 mg/kg

**N-Methyl-2-pyrrolidone:**

- **Acute oral toxicity**: LD50 (Rat): 4.150 mg/kg

- **Acute inhalation toxicity**: LC50 (Rat): > 5.1 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Method: OECD Test Guideline 403

- **Acute dermal toxicity**: LD50 (Rat): > 5.000 mg/kg

**Fluazuron:**

- **Acute oral toxicity**: LD50 (Rat): > 5.000 mg/kg
  - Method: OECD Test Guideline 401

- **Acute inhalation toxicity**: LC50 (Rat): > 6.0 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
Abamectin / Fluazuron Formulation

Method: OECD Test Guideline 403

Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402

Abamectin (combination of avermectin B1a and avermectin B1b):

Acute oral toxicity: LD50 (Rat): 24 mg/kg
LD50 (Mouse): 10 mg/kg
LDLo (Monkey): 24 mg/kg
Symptoms: Dilatation of the pupil

Acute inhalation toxicity: LC50 (Rat): 0,023 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity: LD50 (Rat): 330 mg/kg
LD50 (Rabbit): 2,000 mg/kg

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Acute oral toxicity: LD50 (Rat, male): 2.959 - 5.000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity: LC50 (Rat): >= 5,19 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

2,6-Di-tert-butyl-p-cresol:

Acute oral toxicity: LD50 (Rat): > 6,000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation
Causes skin irritation.

Components:

Propan-2-ol:
Abamectin / Fluazuron Formulation

Species: Rabbit
Result: No skin irritation

N-Methyl-2-pyrrolidone:
Result: Skin irritation

Fluazuron:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Abamectin (combination of avermectin B1a and avermectin B1b):
Species: Rabbit
Result: No skin irritation

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

2,6-Di-tert-butyl-p-cresol:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
Remarks: Based on data from similar materials

Serious eye damage/eye irritation
Causes serious eye irritation.

Components:

Propan-2-ol:
Species: Rabbit
Result: Irritation to eyes, reversing within 21 days

N-Methyl-2-pyrrolidone:
Species: Rabbit
Result: Irritation to eyes, reversing within 21 days

Fluazuron:
Species: Rabbit
Method: OECD Test Guideline 405
Result: Mild eye irritation

Abamectin (combination of avermectin B1a and avermectin B1b):
Species: Rabbit
Result: Mild eye irritation
Abamectin / Fluazuron Formulation

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
- **Species**: Rabbit
- **Method**: OECD Test Guideline 405
- **Result**: No eye irritation

2,6-Di-tert-butyl-p-cresol:
- **Species**: Rabbit
- **Method**: OECD Test Guideline 405
- **Result**: No eye irritation
- **Remarks**: Based on data from similar materials

Respiratory or skin sensitisation

**Skin sensitisation**
May cause an allergic skin reaction.

**Respiratory sensitisation**
Not classified based on available information.

**Components**:

**Propan-2-ol**:
- **Test Type**: Buehler Test
- **Exposure routes**: Skin contact
- **Species**: Guinea pig
- **Method**: OECD Test Guideline 406
- **Result**: negative

**N-Methyl-2-pyrrolidone**:
- **Test Type**: Local lymph node assay (LLNA)
- **Exposure routes**: Skin contact
- **Species**: Mouse
- **Method**: OECD Test Guideline 429
- **Result**: negative
- **Remarks**: Based on data from similar materials

**Fluazuron**:
- **Exposure routes**: Skin contact
- **Species**: Guinea pig
- **Result**: negative

**Abamectin (combination of avermectin B1a and avermectin B1b)**:
- **Test Type**: Maximisation Test
- **Exposure routes**: Skin contact
- **Result**: Not a skin sensitizer.

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate**:
- **Test Type**: Maximisation Test
- **Exposure routes**: Skin contact
- **Species**: Guinea pig
## Result

Result: positive

## Assessment

Assessment: Probability or evidence of skin sensitisation in humans

### 2,6-Di-tert-butyl-p-cresol:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Exposure routes</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human repeat insult patch test (HRIPT)</td>
<td>Skin contact</td>
<td>Humans</td>
<td>negative</td>
</tr>
</tbody>
</table>

### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### Propan-2-ol:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotoxicity in vitro</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: In vitro mammalian cell gene mutation test</td>
<td>negative</td>
</tr>
<tr>
<td>Genotoxicity in vivo</td>
<td>Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>Species: Mouse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Application Route: Intraperitoneal injection</td>
<td></td>
</tr>
</tbody>
</table>

#### N-Methyl-2-pyrroldone:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotoxicity in vitro</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 471</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test Type: In vitro mammalian cell gene mutation test</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 476</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)</td>
<td>negative</td>
</tr>
<tr>
<td>Genotoxicity in vivo</td>
<td>Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>Species: Mouse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Application Route: Ingestion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>Species: Hamster</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Application Route: Ingestion</td>
<td></td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td><strong>Result</strong></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td><strong>Fluazuron:</strong></td>
<td>negative</td>
<td></td>
</tr>
</tbody>
</table>
| Genotoxicity in vitro | Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
Test Type: DNA Repair  
Result: negative  
Test Type: In vitro mammalian cell gene mutation test  
Result: negative |
| Genotoxicity in vivo | Test Type: Cytogenetic assay  
Species: Hamster  
Result: equivocal |
| **Abamectin (combination of avermectin B1a and avermectin B1b):** | negative  |
| Genotoxicity in vitro | Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster lung cells  
Result: negative  
Test Type: Alkaline elution assay  
Result: negative |
| Genotoxicity in vivo | Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative |
| **7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:** | negative  |
| Genotoxicity in vitro | Test Type: In vitro mammalian cell gene mutation test  
Result: positive |
| Genotoxicity in vivo | Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 486  
Result: negative  
Test Type: Micronucleus test  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative |
| Germ cell mutagenicity: Assessment | Weight of evidence does not support classification as a germ cell mutagen. |
2,6-Di-tert-butyl-p-cresol:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Test Type: In vitro mammalian cell gene mutation test Result: negative
Test Type: Chromosome aberration test in vitro Result: negative
Genotoxicity in vivo: Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: Ingestion Result: negative

Carcinogenicity
Not classified based on available information.

Components:

Propan-2-ol:
Species: Rat Application Route: inhalation (vapour) Exposure time: 104 weeks Method: OECD Test Guideline 451 Result: negative

N-Methyl-2-pyrrolidone:
Species: Rat Application Route: Ingestion Exposure time: 2 Years Result: negative
Species: Rat Application Route: inhalation (vapour) Exposure time: 2 Years Result: negative

Fluazuron:
Species: Rat Application Route: Ingestion Exposure time: 2 Years Method: OECD Test Guideline 453 Result: negative
Species: Mouse Application Route: Ingestion Exposure time: 2 Years Result: negative
Abamectin (combination of avermectin B1a and avermectin B1b):
Species: Rat
Application Route: Oral
Exposure time: 105 weeks
Result: negative

Species: Mouse
Application Route: Oral
Exposure time: 93 weeks
Result: negative

2,6-Di-tert-butyl-p-cresol:
Species: Rat
Application Route: Ingestion
Exposure time: 22 Months
Result: negative

Reproductive toxicity
May damage the unborn child.

Components:

Propan-2-ol:
Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on foetal development: Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

N-Methyl-2-pyrrolidone:
Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: negative

Effects on foetal development:
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: positive

Test Type: Fertility/early embryonic development
Species: Rat
Application Route: inhalation (vapour)
Result: positive
Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Ingestion  
Result: positive

Reproductive toxicity - Assessment: Clear evidence of adverse effects on development, based on animal experiments.

**Fluazuron:**

**Effects on fertility**:  
Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

**Effects on foetal development**:  
Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative

**Abamectin (combination of avermectin B1a and avermectin B1b):**

**Effects on fertility**:  
Test Type: Fertility  
Species: Rat, male  
Application Route: Oral  
Result: Effects on fertility

Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Oral  
Early Embryonic Development: NOAEL: 0,12 mg/kg body weight  
Result: Fetotoxicity

**Effects on foetal development**:  
Test Type: Embryo-foetal development  
Species: Mouse  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 0,05 mg/kg body weight  
Developmental Toxicity: NOAEL: 0,2 mg/kg body weight  
Result: Cleft palate  
Remarks: Adverse developmental effects were observed

Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Oral  
Developmental Toxicity: LOAEL: 2 mg/kg body weight  
Result: Cleft palate, Teratogenic effects, Reduced embryonic survival
Remarks: Adverse developmental effects were observed

Test Type: Development  
Species: Rat  
Application Route: Oral  
Developmental Toxicity: LOAEL: 1.6 mg/kg body weight  
Result: Teratogenic effects  

Reproductive toxicity - Assessment:  
Some evidence of adverse effects on sexual function and fertility, based on animal experiments. Some evidence of adverse effects on development, based on animal experiments.  

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:  
Effects on foetal development:  
Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative  

2,6-Di-tert-butyl-p-cresol:  
Effects on fertility:  
Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative  

Effects on foetal development:  
Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative  

STOT - single exposure  
May cause respiratory irritation.  
May cause drowsiness or dizziness.  

Components:  
Propan-2-ol:  
Assessment: May cause drowsiness or dizziness.  

N-Methyl-2-pyrrolidone:  
Assessment: May cause respiratory irritation.  

STOT - repeated exposure  
May cause damage to organs through prolonged or repeated exposure.  

Components:  
Abamectin (combination of avermectin B1a and avermectin B1b):  
Exposure routes: Ingestion  
Target Organs: Central nervous system
Assessment : Causes damage to organs through prolonged or repeated exposure.

2,6-Di-tert-butyl-p-cresol:
Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Repeated dose toxicity

Components:

Propan-2-ol:
Species : Rat
NOAEL : 12.5 mg/l
Application Route : inhalation (vapour)
Exposure time : 104 Weeks

N-Methyl-2-pyrrolidone:
Species : Rat, male
NOAEL : 169 mg/kg
LOAEL : 433 mg/kg
Application Route : Ingestion
Exposure time : 90 Days
Method : OECD Test Guideline 408

Species : Rat
NOAEL : 0.5 mg/l
LOAEL : 1 mg/l
Application Route : inhalation (dust/mist/fume)
Exposure time : 96 Days
Method : OECD Test Guideline 413

Species : Rabbit
NOAEL : 826 mg/kg
LOAEL : 1.653 mg/kg
Application Route : Skin contact
Exposure time : 20 Days

Fluazuron:
Species : Rat
NOAEL : 10 mg/kg
LOAEL : 100 mg/kg
Application Route : Skin contact
Exposure time : 3 Weeks
Target Organs : Liver, Thyroid, Pituitary gland
### Abamectin / Fluazuron Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
</tr>
</thead>
</table>

**Species**: Dog  
**NOAEL**: 7.5 mg/kg  
**LOAEL**: 110 mg/kg  
**Application Route**: Ingestion  
**Exposure time**: 52 Weeks  
**Target Organs**: Liver

**Abamectin (combination of avermectin B1a and avermectin B1b):**

**Species**: Rat  
**NOAEL**: 1.5 mg/kg  
**Application Route**: Oral  
**Exposure time**: 24 Months  
**Target Organs**: Central nervous system  
**Symptoms**: Tremors, ataxia

**Species**: Mouse  
**NOAEL**: 4.0 mg/kg  
**Application Route**: Oral  
**Exposure time**: 24 Months  
**Target Organs**: Central nervous system  
**Symptoms**: Tremors, ataxia

**Species**: Dog  
**NOAEL**: 0.25 mg/kg  
**LOAEL**: 0.5 mg/kg  
**Application Route**: Oral  
**Exposure time**: 53 Weeks  
**Target Organs**: Central nervous system  
**Symptoms**: Tremors, weight loss  
**Remarks**: mortality observed

**Species**: Monkey  
**NOAEL**: 1.0 mg/kg  
**Application Route**: Oral  
**Exposure time**: 14 Weeks  
**Target Organs**: Central nervous system

**2,6-Di-tert-butyl-p-cresol:**

**Species**: Rat  
**NOAEL**: 25 mg/kg  
**Application Route**: Ingestion  
**Exposure time**: 22 Months

**Aspiration toxicity**  
Not classified based on available information.

**Experience with human exposure**

**Components:**

**N-Methyl-2-pyrrolidone:**  
**Skin contact**: Symptoms: Skin irritation
**Abamectin / Fluazuron Formulation**

**SECTION 12: Ecological information**

### 12.1 Toxicity

**Components: Propan-2-ol:**
- **Toxicity to fish**
  - LC50 (Pimephales promelas (fathead minnow)): 9.640 mg/l
  - Exposure time: 96 h
- **Toxicity to daphnia and other aquatic invertebrates**
  - EC50 (Daphnia magna (Water flea)): > 10.000 mg/l
  - Exposure time: 24 h
- **Toxicity to microorganisms**
  - EC50 (Pseudomonas putida): > 1.050 mg/l
  - Exposure time: 16 h

**N-Methyl-2-pyrrolidone:**
- **Toxicity to fish**
  - LC50 (Oncorhynchus mykiss (rainbow trout)): > 500 mg/l
  - Exposure time: 96 h
- **Toxicity to daphnia and other aquatic invertebrates**
  - EC50 (Daphnia magna (Water flea)): > 1.000 mg/l
  - Exposure time: 24 h
  - Method: DIN 38412
- **Toxicity to algae/aquatic plants**
  - EC50 (Desmodesmus subspicatus (green algae)): 600,5 mg/l
  - Exposure time: 72 h
  - EC10 (Desmodesmus subspicatus (green algae)): 92,6 mg/l
  - Exposure time: 72 h
- **Toxicity to microorganisms**
  - EC50: > 600 mg/l
  - Exposure time: 30 min
  - Method: ISO 8192
- **Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**
  - NOEC: 12,5 mg/l
  - Exposure time: 21 d
  - Species: Daphnia magna (Water flea)
  - Method: OECD Test Guideline 211

**Fluazuron:**
- **Toxicity to fish**
  - LC50 (Cyprinus carpio (Carp)): > 9,1 mg/l
  - Exposure time: 96 h
- **Toxicity to daphnia and other aquatic invertebrates**
  - EC50 (Daphnia sp. (water flea)): 0,0006 mg/l
  - Exposure time: 48 h
- **Toxicity to algae/aquatic plants**
  - NOEC (Raphidocelis subcapitata (freshwater green alga)): 27,9 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic toxicity): 1.000

M-Factor (Chronic aquatic toxicity): 1.000

**Abamectin (combination of avermectin B1a and avermectin B1b):**

**Toxicity to fish**
- LC50 (Oncorhynchus mykiss (rainbow trout)): 3.2 µg/l  
  Exposure time: 96 h
- LC50 (Lepomis macrochirus (Bluegill sunfish)): 9.6 µg/l  
  Exposure time: 96 h
- LC50 (Ictalurus punctatus (channel catfish)): 24 µg/l  
  Exposure time: 96 h
- LC50 (Cyprinus carpio (Carp)): 42 µg/l  
  Exposure time: 96 h
- LC50 (Cyprinodon variegatus (sheepshead minnow)): 15 µg/l  
  Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 (Americamysis): 0.022 µg/l  
  Exposure time: 96 h
- EC50 (Daphnia magna (Water flea)): 0.34 µg/l  
  Exposure time: 48 h

**Toxicity to algae/aquatic plants**
- EC50 (Pseudokirchneriella subcapitata (green algae)): 100 mg/l  
  Exposure time: 72 h

**M-Factor (Acute aquatic toxicity):** 10.000

**Toxicity to microorganisms**
- EC50: > 1.000 mg/l  
  Exposure time: 3 h  
  Test Type: Respiration inhibition

**Toxicity to fish (Chronic toxicity)**
- NOEC: 0.52 µg/l  
  Exposure time: 32 d  
  Species: Pimephales promelas (fathead minnow)

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**
- NOEC: 0.03 µg/l  
  Exposure time: 21 d  
  Species: Daphnia magna (Water flea)
- NOEC: 0.0035 µg/l  
  Exposure time: 28 d  
  Species: Mysis dysopsis bahia (opossum shrimp)

**M-Factor (Chronic aquatic toxicity):** 10.000
SAFETY DATA SHEET  
according to Regulation (EC) No. 1907/2006

Abamectin / Fluazuron Formulation

Version 4.3  Revision Date: 23.03.2020  SDS Number: 803738-00014  Date of last issue: 13.09.2019
Date of first issue: 12.07.2016

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 24 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 40 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): > 110 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Selenastrum capricornutum (green algae)): 30 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC10 (Natural microorganism): 409 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

2,6-Di-tert-butyl-p-cresol:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 0,57 mg/l  
Exposure time: 96 h  

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,48 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0,24 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,24 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 : > 10.000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity) : NOEC: 0,053 mg/l  
Exposure time: 30 d  
Species: Oryzias latipes (Japanese medaka)  
Method: OECD Test Guideline 210
Abamectin / Fluazuron Formulation

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
- NOEC: 0.316 mg/l
- Exposure time: 21 d
- Species: Daphnia magna (Water flea)
- M-Factor (Chronic aquatic toxicity): 1

12.2 Persistence and degradability

**Components:**

**Propan-2-ol:**
- Biodegradability: Result: rapidly degradable
- BOD/COD:
  - BOD: 1.19 (BOD5)
  - COD: 2.23
  - BOD/COD: 53%

**N-Methyl-2-pyrrolidone:**
- Biodegradability: Result: Readily biodegradable.
- Biodegradation: 73%
- Exposure time: 28 d
- Method: OECD Test Guideline 301C

**Abamectin (combination of avermectin B1a and avermectin B1b):**
- Stability in water: Hydrolysis: 50% (<12 h)

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**
- Biodegradability: Biodegradation: 71%
- Exposure time: 28 d
- Method: OECD Test Guideline 301B
- Stability in water: Degradation half life (DT50): 2 d

**2,6-Di-tert-butyl-p-cresol:**
- Biodegradability: Result: Not readily biodegradable.
- Biodegradation: 4.5%
- Exposure time: 28 d
- Method: OECD Test Guideline 301C

12.3 Bioaccumulative potential

**Components:**

**Propan-2-ol:**
- Partition coefficient: n-octanol/water: log Pow: 0.05

**N-Methyl-2-pyrrolidone:**
- Partition coefficient: n-octanol/water: log Pow: -0.46
- Method: OECD Test Guideline 107
Fluazuron:
Partition coefficient: n-octanol/water: log Pow: 5.1

Abamectin (combination of avermectin B1a and avermectin B1b):
Bioaccumulation: Bioconcentration factor (BCF): 52
Partition coefficient: n-octanol/water: log Pow: 4

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
Partition coefficient: n-octanol/water: log Pow: 1.34

2,6-Di-tert-butyl-p-cresol:
Bioaccumulation: Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 330 - 1.800
Partition coefficient: n-octanol/water: log Pow: 5.1

12.4 Mobility in soil

Components:
Abamectin (combination of avermectin B1a and avermectin B1b):
Distribution among environmental compartments: log Koc: > 3.6

12.5 Results of PBT and vPvB assessment
Not relevant

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product: Dispose of in accordance with local regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.
Empty containers retain residue and can be dangerous.
Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.
If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
Abamectin / Fluazuron Formulation

14.2 UN proper shipping name

ADN : UN 1993
ADR : UN 1993
RID : UN 1993
IMDG : UN 1993
IATA : UN 1993

14.3 Transport hazard class(es)

ADN : 3
ADR : 3
RID : 3
IMDG : 3
IATA : 3

14.4 Packing group

ADN
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

ADR
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3
Tunnel restriction code : (D/E)

RID
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

IMDG
Packing group : III
Abamectin / Fluazuron Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
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<th>Date of first issue</th>
</tr>
</thead>
</table>

**Labels**
- **EmS Code**: 3
- **IATA (Cargo)**
  - Packing instruction (cargo aircraft): 366
  - Packing instruction (LQ): Y344
  - Packing group: III
  - Labels: Flammable Liquids
- **IATA (Passenger)**
  - Packing instruction (passenger aircraft): 355
  - Packing instruction (LQ): Y344
  - Packing group: III
  - Labels: Flammable Liquids

**14.5 Environmental hazards**

- **ADN**
  - Environmentally hazardous: yes
- **ADR**
  - Environmentally hazardous: yes
- **RID**
  - Environmentally hazardous: yes
- **IMDG**
  - Marine pollutant: yes

**14.6 Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

- Remarks: Not applicable for product as supplied.

**SECTION 15: Regulatory information**

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

- **REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)**
  - Conditions of restriction for the following entries should be considered:
    - Number on list 3
    - N-Methyl-2-pyrrolidone (Number on list 72, 71, 30)

- **REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).**
  - N-Methyl-2-pyrrolidone

- **REACH - List of substances subject to authorisation (Annex XIV).**
  - Not applicable

- **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.**
  - Not applicable

- **Regulation (EU) 2019/1021 on persistent organic pollu-**
  - Not applicable
tants (recast)
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

Other regulations:
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
Young people under the age of 18 are not allowed to use or be exposed to the product professionally. Young people above the age of 15 are, however, except from this rule if the product is a necessary part of their education.

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

AICS: not determined
DSL: not determined
IECSC: not determined

15.2 Chemical safety assessment
A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information: Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements

H225: Highly flammable liquid and vapour.
H300: Fatal if swallowed.
H311: Toxic in contact with skin.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H330: Fatal if inhaled.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H360D: May damage the unborn child.
H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
H372: Causes damage to organs through prolonged or repeated exposure if swallowed.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations
SAFETY DATA SHEET
generated according to Regulation (EC) No. 1907/2006

Abamectin / Fluazuron Formulation

Version: 4.3
Revision Date: 23.03.2020
SDS Number: 803738-00014
Date of first issue: 12.07.2016
Date of last issue: 13.09.2019

Acute Tox. : Acute toxicity
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
Repr. : Reproductive toxicity
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
STOT RE : Specific target organ toxicity - repeated exposure
STOT SE : Specific target organ toxicity - single exposure

FOR-2011-12-06-1358 : Norway. Occupational Exposure limits
2009/161/EU / TWA : Limit Value - eight hours
2009/161/EU / STEL : Short term exposure limit
FOR-2011-12-06-1358 / TWA : Long term exposure limit
FOR-2011-12-06-1358 / STEL : Short term exposure limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErC - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative
Further information
Sources of key data used to compile the Safety Data Sheet:
- Internal technical data
- Data from raw material SDSs
- OECD eChem Portal search results

Classification of the mixture:

<table>
<thead>
<tr>
<th>Category</th>
<th>Classification</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 3</td>
<td>H226</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>H332</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>H315</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
<td>H319</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>H317</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Repr. 1B</td>
<td>H360D</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>H335</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>H336</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT RE 2</td>
<td>H373</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
<td>H400</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
<td>H410</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

NO / EN