SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Ivermectin / Abamectin Liquid Formulation

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

1.1 Product identifier
Trade name: Ivermectin / Abamectin Liquid 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
Kilsheean
Clonmel Tipperary, IE

Telephone: 353-51-601000

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)

- Acute toxicity, Category 4: H302: Harmful if swallowed.
- Acute toxicity, Category 4: H332: Harmful if inhaled.
- Skin irritation, Category 2: H315: Causes skin irritation.
- Eye irritation, Category 2: H319: Causes serious eye irritation.
- Reproductive toxicity, Category 1B: H360D: May damage the unborn child.
- Specific target organ toxicity - single exposure, Category 2: H371: May cause damage to organs.
- Specific target organ toxicity - single exposure, Category 3: H335: May cause respiratory irritation.
- Specific target organ toxicity - repeated exposure, Category 2: H373: May cause damage to organs through prolonged or repeated exposure.
- Short-term (acute) aquatic hazard, Category 1: H400: Very toxic to aquatic life.
- Long-term (chronic) aquatic hazard, Category 1: H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)
Ivermectin / Abamectin Liquid Formulation

Hazard pictograms: 🚨 ⚠️ 🐿️

Signal word: Danger

Hazard statements:
- H302 + H332 Harmful if swallowed or if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H360D May damage the unborn child.
- H371 May cause damage to organs.
- 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.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
- P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
- P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.
- P391 Collect spillage.

Hazardous components which must be listed on the label:
- N-Methyl-2-pyrrolidone
- Ivermectin
- Abamectin (combination of avermectin B1a and avermectin B1b) (ISO)

Additional Labelling
- Restricted to professional users.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Methyl-2-pyrrolidone</td>
<td>872-50-4</td>
<td>212-828-1</td>
<td>606-021-00-7</td>
<td>Skin Irrit. 2; H315 Eye Irrit. 2; H319 Rep. 1B; H360D STOT SE 3; H335</td>
<td>&gt;= 20 - &lt; 30</td>
</tr>
<tr>
<td>Ivermectin</td>
<td>70288-86-7</td>
<td>274-536-0</td>
<td></td>
<td>Acute Tox. 2; H300 Acute Tox. 3; H311 STOT SE 1; H370 (Central nervous system) STOT RE 1; H372 (Central nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 1 - &lt; 2.5</td>
</tr>
<tr>
<td>abamectin (combination of avermectin B1a and avermectin B1b) (ISO)</td>
<td>71751-41-2</td>
<td>606-143-00-0</td>
<td></td>
<td>Acute Tox. 2; H300 Acute Tox. 1; H330 Acute Tox. 3; H311 Rep. 2; H361fd STOT RE 1; H372 (Central nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 1 - &lt; 2.5</td>
</tr>
</tbody>
</table>
Ivermectin / Abamectin Liquid Formulation

**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. When symptoms persist or in all cases of doubt seek medical advice.

**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.

---

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

specific concentration limit
STOT RE 1; H372
\[ \geq 5\% \]
STOT RE 2; H373
\[ 0,5 - < 5\% \]

(dl)-a-Tocopheryl acetate
7695-91-2
231-710-0
< 0,1

For explanation of abbreviations see section 16.
Ivermectin / Abamectin Liquid Formulation

5.1 Extinguishing media

Suitable extinguishing media:
- Water spray
- Alcohol-resistant foam
- Carbon dioxide (CO2)
- Dry chemical

Unsuitable extinguishing media:
- None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting:
- Exposure to combustion products may be a hazard to health.

Hazardous combustion products:
- Carbon oxides
- Nitrogen oxides (NOx)

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:
- Use personal protective equipment.
- Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
6.2 Environmental precautions

Environmental precautions:
Avoid release to the environment.
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:
Soak up with inert absorbent material.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked 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/PERSONAL PROTECTION section.
Local/Total ventilation:
If sufficient ventilation is unavailable, use with local exhaust ventilation.
Advice on safe handling:
Do not get on skin or clothing.
Do not breathe mist or vapours.
Do not swallow.
Do not get in eyes.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
Keep container tightly closed.
Already sensitised individuals should consult their physician regarding working with respiratory irritants or sensitisers.
Do not eat, drink or smoke when using this product.
Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures:
If exposure to chemical is likely during typical use, provide eyewashing facilities 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
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.

Advice on common storage: Do not store with the following product types:
- Strong oxidizing agents
- Organic peroxides
- 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>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>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>20 ppm 80 mg/m³</td>
<td>FOR-2011-12-06-1358</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm 40 mg/m³</td>
<td>2009/161/EU</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>20 ppm 80 mg/m³</td>
<td>2009/161/EU</td>
</tr>
<tr>
<td>Ivermectin</td>
<td>70288-86-7</td>
<td>TWA</td>
<td>0.05 mg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>0.5 mg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td>abamectin (combination of avermectin B1a and avermectin B1b) (ISO)</td>
<td>71751-41-2</td>
<td>TWA</td>
<td>15 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>150 µg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td>(dl)-a-Tocopheryl</td>
<td>7695-91-2</td>
<td>TWA</td>
<td>5000 µg/m³ (OEB 1)</td>
<td>Internal</td>
</tr>
</tbody>
</table>
**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>Consumers</td>
<td>Inhalation</td>
<td></td>
<td>Long-term systemic effects</td>
<td>3.6 mg/m³</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td></td>
<td>Long-term local effects</td>
<td>4.5 mg/m³</td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td></td>
<td>Long-term systemic effects</td>
<td>2.4 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td></td>
<td>Long-term systemic effects</td>
<td>0.85 mg/kg bw/day</td>
</tr>
<tr>
<td>(dl)-a-Tocopheryl acetate</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>73.5 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>416.6 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td></td>
<td>Long-term systemic effects</td>
<td>21.7 mg/m³</td>
</tr>
<tr>
<td>Consumers</td>
<td>Skin contact</td>
<td></td>
<td>Long-term systemic effects</td>
<td>250 mg/kg bw/day</td>
</tr>
<tr>
<td>Consumers</td>
<td>Ingestion</td>
<td></td>
<td>Long-term systemic effects</td>
<td>12.5 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>Fresh water</td>
<td>0.25 mg/l</td>
</tr>
<tr>
<td></td>
<td>Freshwater - intermittent</td>
<td>5 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.025 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>1.09 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>1.09 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.07 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>(dl)-a-Tocopheryl acetate</td>
<td>Fresh water</td>
<td>0.27 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.027 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.27 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>100 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>212000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>21200 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>74800 mg/kg</td>
</tr>
</tbody>
</table>
## 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**

<table>
<thead>
<tr>
<th>Protection</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye protection</td>
<td>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.</td>
</tr>
<tr>
<td>Hand protection</td>
<td>Material: Chemical-resistant gloves Remarks: Consider double gloving. 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.</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>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)</td>
</tr>
</tbody>
</table>

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>light yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling</td>
<td>No data available</td>
</tr>
<tr>
<td>range</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Ivermectin / Abamectin Liquid Formulation

Version 4.5
Revision Date: 27.08.2021
SDS Number: 1212766-00014
Date of last issue: 26.04.2021
Date of first issue: 10.01.2017

Lower explosion limit / Lower flammability limit : No data available
Flash point : > 100 °C
Auto-ignition temperature : No data available
 Decomposition temperature : No data available
pH : Not applicable
Viscosity
Viscosity, kinematic : No data available
Solubility(ies)
Water solubility : insoluble
Partition coefficient: n-octanol/water : Not applicable
Vapour pressure : No data available
Relative density : No data available
Density : 0,91 - 1,00 mg/l
Relative vapour density : No data available
Particle characteristics
Particle size : Not applicable

9.2 Other information
Explosives : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.
Evaporation rate : No data available
Molecular weight : No data available

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 : Can react with strong oxidizing agents.

10.4 Conditions to avoid
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 hazard classes as defined in Regulation (EC) No 1272/2008

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

Acute toxicity

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity: Acute toxicity estimate: 1.031 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: 1.84 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:

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

Ivermectin:

Acute oral toxicity: LD50 (Rat): 50 mg/kg
LD50 (Mouse): 25 mg/kg
LD50 (Monkey): > 24 mg/kg
Target Organs: Central nervous system
Symptoms: Vomiting, Dilatation of the pupil
Remarks: No mortality observed at this dose.

Acute inhalation toxicity: LC50 (Rat): 5.11 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist

Acute dermal toxicity: LD50 (Rabbit): 406 mg/kg
LD50 (Rat): > 660 mg/kg

**abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

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

**(dl)-a-Tocopheryl acetate:**

Acute oral toxicity: LD50 (Rat): > 5.000 mg/kg
Acute dermal toxicity: LD50 (Rat): > 3.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**
Causes skin irritation.

**Components:**

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

**Ivermectin:**
Species: Rabbit
Result: No skin irritation

**abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**
Species: Rabbit
Result: No skin irritation

**(dl)-a-Tocopheryl acetate:**
Serious eye damage/eye irritation
Causes serious eye irritation.

Components:

N-Methyl-2-pyrrolidone:
Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Ivermectin:
Species : Rabbit
Method : OECD Test Guideline 405
Result : No skin irritation

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):
Species : Rabbit
Method : OECD Test Guideline 405
Result : No skin irritation

Components:

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

Ivermectin:
Exposure routes : Dermal
Species : Humans
Result : Does not cause skin sensitisation.

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):
# Ivermectin / Abamectin Liquid Formulation

## Components:

### N-Methyl-2-pyrrolidone:

**Genotoxicity in vitro**

- **Test Type:** Bacterial reverse mutation assay (AMES)
- **Method:** OECD Test Guideline 471
- **Result:** negative

- **Test Type:** In vitro mammalian cell gene mutation test
- **Method:** OECD Test Guideline 476
- **Result:** negative

- **Test Type:** DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
- **Method:** OECD Test Guideline 476
- **Result:** negative

**Genotoxicity in vivo**

- **Test Type:** Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
- **Species:** Mouse
- **Application Route:** Ingestion
- **Method:** OECD Test Guideline 474
- **Result:** negative

- **Test Type:** Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
- **Species:** Hamster
- **Application Route:** Ingestion
- **Method:** OECD Test Guideline 475
- **Result:** negative

### (dl)-a-Tocopheryl acetate:

**Test Type**

- **Exposure routes:** Skin contact
- **Result:** Not a skin sensitizer.

**Germ cell mutagenicity**

Not classified based on available information.

### Ivermectin:

**Genotoxicity in vitro**

- **Test Type:** Bacterial reverse mutation assay (AMES)
- **Result:** negative

- **Test Type:** DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
  - **Test system:** human diploid fibroblasts
  - **Result:** negative

- **Test Type:** Mouse Lymphoma
Result: negative

**abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

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

**(dl)-a-Tocopheryl acetate:**

Genotoxicity in vitro: Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative

Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Result: negative

**Carcinogenicity**
Not classified based on available information.

**Components:**

**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
Ivermectin / Abamectin Liquid 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>
<tbody>
<tr>
<td>4.5</td>
<td>27.08.2021</td>
<td>1212766-00014</td>
<td>26.04.2021</td>
<td>10.01.2017</td>
</tr>
</tbody>
</table>

**Ivermectin:**
- **Species:** Rat
- **Application Route:** Oral
- **NOAEL:** 1.5 mg/kg body weight
- **Result:** negative
- **Remarks:** Based on data from similar materials

**abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**
- **Species:** Rat
- **Application Route:** Oral
- **Exposure time:** 105 weeks
- **Result:** negative
- **Species:** Mouse
- **Application Route:** Oral
- **Exposure time:** 93 weeks
- **Result:** negative

**(dl)-a-Tocopheryl acetate:**
- **Species:** Rat
- **Application Route:** Ingestion
- **Exposure time:** 104 weeks
- **Result:** negative

**Reproductive toxicity**
May damage the unborn child.

**Components:**

**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:** Test Type: Embryo-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
Reproductive toxicity - Assessment:

Ivermectin:

Effects on fertility:

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.

Ivermectin:

Effects on fertility:

Test Type: Fertility
Species: Rat
Application Route: Oral
Fertility: NOAEL: 0.6 mg/kg body weight
Result: Animal testing did not show any effects on fertility.

Effects on foetal development:

Test Type: Development
Species: Mouse
Application Route: Oral
Developmental Toxicity: NOAEL: 0.2 mg/kg body weight
Result: Teratogenic effects, Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses

Test Type: Development
Species: Rat
Application Route: Oral
Developmental Toxicity: LOAEL: 0.4 mg/kg body weight
Result: Embryotoxic effects and adverse effects on the offspring were detected. Remarks: The mechanism or mode of action may not be relevant in humans.

Test Type: Development
Species: Rabbit
Application Route: Oral
Result: Teratogenic effects, Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses

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

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.

(dl)-a-Tocopheryl acetate:

Effects on fertility:

- Test Type: Reproduction/Developmental toxicity screening test
  - Species: Rat
  - Application Route: Ingestion
  - Result: negative

Effects on foetal development:

- Test Type: Embryo-foetal development
  - Species: Rabbit
  - Application Route: Ingestion
  - Result: negative

STOT - single exposure

May cause respiratory irritation.
May cause damage to organs.

Components:

N-Methyl-2-pyrrolidone:

- Assessment: May cause respiratory irritation.

Ivermectin:

- Target Organs: Central nervous system
- Assessment: Causes damage to organs.
STOT - repeated exposure  
May cause damage to organs through prolonged or repeated exposure.

**Components:**

**Ivermectin:**
Target Organs: Central nervous system  
Assessment: Causes damage to organs through prolonged or repeated exposure.

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

**Repeated dose toxicity**

**Components:**

**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

**Ivermectin:**
Species: Dog  
NOAEL: 0.5 mg/kg  
LOAEL: 1 mg/kg  
Application Route: Oral  
Exposure time: 14 Weeks  
Target Organs: Central nervous system  
Symptoms: Dilatation of the pupil, Tremors, Lack of coordination, anorexia

Species: Monkey  
NOAEL: 1.2 mg/kg
Ivermectin / Abamectin Liquid Formulation

Application Route: Oral
Exposure time: 2 Weeks
Remarks: No significant adverse effects were reported

Species: Rat
NOAEL: 0.4 mg/kg
LOAEL: 0.8 mg/kg
Application Route: Oral
Exposure time: 3 Months
Target Organs: spleen, Bone marrow, Kidney

_abamectin (combination of avermectin B1a and avermectin B1b) (ISO):_

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

_(dl)-a-Tocopheryl acetate:_

Species: Rat
NOAEL: 500 mg/kg
Application Route: Ingestion
Exposure time: 90 Days

**Aspiration toxicity**

Not classified based on available information.
11.2 Information on other hazards

**Endocrine disrupting properties**

**Product:**

| Assessment | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |

**Experience with human exposure**

**Components:**

<table>
<thead>
<tr>
<th>N-Methyl-2-pyrrolidone:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skin contact</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ivermectin:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skin contact</strong></td>
</tr>
<tr>
<td><strong>Eye contact</strong></td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
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</table>

<table>
<thead>
<tr>
<th>abamectin (combination of avermectin B1a and avermectin B1b) (ISO):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ingestion</strong></td>
</tr>
</tbody>
</table>

### SECTION 12: Ecological information

#### 12.1 Toxicity

**Components:**

<table>
<thead>
<tr>
<th>N-Methyl-2-pyrrolidone:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Toxicity to fish</strong></td>
</tr>
</tbody>
</table>

| **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** | ErC50 (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 (Chron-** | NOEC: 12.5 mg/l Exposure time: 21 d |
Ivermectin / Abamectin Liquid Formulation

ic toxicity) Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

**Ivermectin:**

**Toxicity to fish**

: LC50 (Oncorhynchus mykiss (rainbow trout)): 0.003 mg/l Exposure time: 96 h
LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.0048 mg/l Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates**

: EC50 (Daphnia magna (Water flea)): 0.00025 mg/l Exposure time: 48 h

**Toxicity to algae/aquatic plants**

: EC50 (Pseudokirchneriella subcapitata (green algae)): > 9.1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
NOEC (Pseudokirchneriella subcapitata (green algae)): 9.1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

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

: 10.000

**M-Factor (Chronic aquatic toxicity)**

: 10.000

**abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

**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)
- Value: 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: Mysidopsis bahia (opossum shrimp)

### M-Factor (Chronic aquatic toxicity)
- Value: 10,000

### (dl)-a-Tocopheryl acetate

#### Toxicity to fish
- LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 203

#### Toxicity to daphnia and other aquatic invertebrates
- EC50 (Daphnia magna (Water flea)): > 100 mg/l
- Exposure time: 48 h
- Method: OECD Test Guideline 202

#### Toxicity to algae/aquatic plants
- ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
- Exposure time: 72 h
- Method: OECD Test Guideline 201
  - NOEC (Pseudokirchneriella subcapitata (green algae)): >= 100 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201

#### Toxicity to microorganisms
- EC50: > 927 mg/l
- Exposure time: 30 min
- Method: ISO 8192

#### Toxicity to fish (Chronic toxicity)
- NOEC: 100 mg/l
- Exposure time: 28 d
- Species: Oncorhynchus mykiss (rainbow trout)
12.2 Persistence and degradability

Components:

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

Ivermectin:
Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 50 %  
Exposure time: 240 d

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):
Stability in water : Hydrolysis: 50 % (< 12 h)

(dl)-a-Tocopheryl acetate:
Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 21.7 - 31 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301C

12.3 Bioaccumulative potential

Components:

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

Ivermectin:
Bioaccumulation : Bioconcentration factor (BCF): 74

Partition coefficient: n-octanol/water : log Pow: 3.22

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):
Bioaccumulation : Bioconcentration factor (BCF): 52

Partition coefficient: n-octanol/water : log Pow: 4

12.4 Mobility in soil

Components:

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):
Distribution among environmental compartments : log Koc: > 3.6
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according to Regulation (EC) No. 1907/2006

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Date of first issue: 10.01.2017

12.5 Results of PBT and vPvB assessment

**Product:**
**Assessment**
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

**Product:**
**Assessment**
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 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. If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number or ID number

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>ADN</strong></td>
<td>UN 3082</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>UN 3082</td>
</tr>
<tr>
<td><strong>RID</strong></td>
<td>UN 3082</td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
<td>UN 3082</td>
</tr>
<tr>
<td><strong>IATA</strong></td>
<td>UN 3082</td>
</tr>
</tbody>
</table>

14.2 UN proper shipping name

**ADN**
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (abamectin (combination of avermectin B1a and avermectin B1b) (ISO), Ivermectin)

**ADR**
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (abamectin (combination of avermectin B1a and avermectin B1b) (ISO), Ivermectin)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (abamectin (combination of avermectin B1a and avermectin B1b) (ISO), Ivermectin)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (abamectin (combination of avermectin B1a and avermectin B1b) (ISO), Ivermectin)

IATA : Environmentally hazardous substance, liquid, n.o.s. (abamectin (combination of avermectin B1a and avermectin B1b) (ISO), Ivermectin)

14.3 Transport hazard class(es)

ADN : 9
ADR : 9
RID : 9
IMDG : 9
IATA : 9

14.4 Packing group

ADN
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

ADR
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (-)

RID
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

IMDG
Packing group : III
Labels : 9
EmS Code : F-A, S-F

IATA (Cargo)
Packing instruction (cargo aircraft) : 964
Packing instruction (LQ) : Y964
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<table>
<thead>
<tr>
<th>Packing group</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labels</td>
<td>Miscellaneous</td>
</tr>
</tbody>
</table>

**IATA (Passenger)**
- Packing instruction (passenger aircraft) : 964
- Packing instruction (LQ) : Y964
- Packing group : III
- Labels : Miscellaneous

**14.5 Environmental hazards**

| ADN | Environmentally hazardous | yes |
|ADR | Environmentally hazardous | yes |
|RID | Environmentally hazardous | yes |

**IMDG**
- Marine pollutant : yes

**IATA (Passenger)**
- Environmentally hazardous : yes

**IATA (Cargo)**
- Environmentally hazardous : 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 Maritime transport in bulk according to IMO instruments**
- 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**

<table>
<thead>
<tr>
<th>REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)</th>
<th>Conditions of restriction for the following entries should be considered: Number on list 3 N-Methyl-2-pyrrolidone (Number on list 72, 71, 30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).</td>
<td>N-Methyl-2-pyrrolidone</td>
</tr>
<tr>
<td>REACH - List of substances subject to authorisation (Annex XIV)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Regulation (EC) No 1005/2009 on substances that deplete the ozone layer</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Regulation (EU) 2019/1021 on persistent organic pollutants (recast)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
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according to Regulation (EC) No. 1907/2006

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Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable

<table>
<thead>
<tr>
<th>E1</th>
<th>ENVIRONMENTAL HAZARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity 1</td>
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<tr>
<td></td>
<td>100 t</td>
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</tbody>
</table>

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

- H300: Fatal if swallowed.
- H311: Toxic in contact with skin.
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H330: Fatal if inhaled.
- H335: May cause respiratory irritation.
- H360D: May damage the unborn child.
- H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
- H370: Causes damage to organs if swallowed.
- 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

- Acute Tox.: Acute toxicity
- Aquatic Acute: Short-term (acute) aquatic hazard
- Aquatic Chronic: Long-term (chronic) aquatic hazard
- Eye Irrit.: Eye irritation
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Repr.: Reproductive toxicity
Skin Irrit.: Skin irritation
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

Further information
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Classification of the mixture:

<table>
<thead>
<tr>
<th>Property</th>
<th>Classification</th>
<th>Calculation method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4</td>
<td>H302</td>
<td>Calculation method</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>
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<tr>
<td>Repr. 1B</td>
<td>H360D</td>
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<tr>
<td>STOT SE 2</td>
<td>H371</td>
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</tr>
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<td>STOT SE 3</td>
<td>H335</td>
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</tr>
<tr>
<td>STOT RE 2</td>
<td>H373</td>
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</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>
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</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.