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

1.1 Product identifier
   Trade name: Ethion / Chlorpyrifos / Alpha-Cypermethrin 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
   Walton Manor, Walton
   MK7 7AJ Milton Keynes - United Kingdom
   Telephone: 908-740-4000
   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)

- Acute toxicity, Category 3: H301: Toxic if swallowed.
- Acute toxicity, Category 4: H332: Harmful if inhaled.
- Acute toxicity, Category 3: H311: Toxic in contact with skin.
- Skin irritation, Category 2: H315: Causes skin irritation.
- Serious eye damage, Category 1: H318: Causes serious eye damage.
- Germ cell mutagenicity, Category 1B: H340: May cause genetic defects.
- Carcinogenicity, Category 1B: H350: May cause cancer.
- Reproductive toxicity, Category 1B: H360FD: May damage fertility. May damage the unborn child.
- Specific target organ toxicity - single exposure, Category 1: H370: Causes damage to organs.
- Specific target organ toxicity - single exposure, Category 3: H336: May cause drowsiness or dizziness.
- Specific target organ toxicity - repeated exposure, Category 1: H372: Causes damage to organs through prolonged or repeated exposure.
- Aspiration hazard, Category 1: H304: May be fatal if swallowed and enters airways.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version: 3.3
Revision Date: 23.03.2020
SDS Number: 937672-00008
Date of last issue: 13.09.2019
Date of first issue: 12.10.2016

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms:

Signal word: Danger

Hazard statements:
H226 Flammable liquid and vapour.
H301 + H311 Toxic if swallowed or in contact with skin.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H360FD May damage fertility. May damage the unborn child.
H370 Causes damage to organs.
H372 Causes 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:
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.
P391 Collect spillage.

Hazardous components which must be listed on the label:
Solvent naphtha (petroleum), light aromatic
Ethion
Chlorpyrifos
2-Methyl-1-propanol

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>Components</th>
<th>CAS-No. EC-No. Index-No. Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6 265-199-0 649-356-00-4</td>
<td>Flam. Liq. 3; H226 Skin Irrit. 2; H315 Muta. 1B; H340 Carc. 1B; H350 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411</td>
<td>&gt;= 50 - &lt; 70</td>
</tr>
<tr>
<td>Ethion</td>
<td>563-12-2 209-242-3 015-047-00-2</td>
<td>Acute Tox. 2; H300 Acute Tox. 2; H330 Acute Tox. 2; H310 STOT SE 1; H370 STOT RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td>Chlorpyrifos</td>
<td>2921-88-2 220-864-4 015-084-00-4</td>
<td>Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 4; H312 Repr. 1B; H360FD STOT SE 1; H370 STOT RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 2.5 - &lt; 10</td>
</tr>
</tbody>
</table>
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 immediately.

If swallowed: If swallowed, DO NOT induce vomiting. If vomiting occurs have person lean forward. Call a physician or poison control centre immediately. 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: Toxic if swallowed or in contact with skin. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye damage. Harmful if inhaled. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. May damage fertility. May damage the unborn child. Causes damage to organs. Causes 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

Unsuitable extinguishing: High volume water jet
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version 3.3 Revision Date: 23.03.2020 SDS Number: 937672-00008 Date of last issue: 13.09.2019
Date of first issue: 12.10.2016

media

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 Sulphur oxides Oxides of phosphorus Chlorine compounds 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: 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 dyking or other appropriate contain-
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

<table>
<thead>
<tr>
<th>Technical measures</th>
<th>See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local/Total ventilation</td>
<td>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.</td>
</tr>
<tr>
<td>Advice on safe handling</td>
<td>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. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment.</td>
</tr>
<tr>
<td>Hygiene measures</td>
<td>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.</td>
</tr>
</tbody>
</table>

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. |
| Advice on common storage | Do not store with the following product types: Strong oxidizing agents Organic peroxides |
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>Chlorpyrifos</td>
<td>2921-88-2</td>
<td>TWA</td>
<td>0.2 mg/m³</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.</td>
<td></td>
</tr>
<tr>
<td>2-Methyl-1-propanol</td>
<td>78-83-1</td>
<td>TWA</td>
<td>50 ppm</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>154 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>0.6 mg/m³</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>75 ppm</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>231 mg/m³</td>
<td></td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>128-37-0</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>GB EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Further information: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.</td>
<td></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>2-Methyl-1-propanol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>310 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>55 mg/m³</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</td>
<td>0.25 mg/kg</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
generated according to Regulation (EC) No. 1907/2006

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version 3.3 Revision Date: 23.03.2020 SDS Number: 937672-00008 Date of last issue: 13.09.2019 Date of first issue: 12.10.2016

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-1-propanol</td>
<td>Fresh water</td>
<td>0.4 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.04 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>11 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>1.56 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.156 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.076 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>Fresh water</td>
<td>0.199 µg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.02 µg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.02 µg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>0.17 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.0996 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.00996 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.04769 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Oral (Secondary Poisoning)</td>
<td>8.33 mg/kg food</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Engineering measures
Minimize workplace exposure concentrations.
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.

Personal protective equipment
Eye protection: Wear the following personal protective equipment:
- Chemical resistant goggles must be worn.
- If splashes are likely to occur, wear:
  - Face-shield
  - Equipment should conform to BS EN 166

Hand protection
Material: Chemical-resistant gloves

Remarks: Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Take note that the product is flammable, which may impact the selection of hand protection. Wash hands before breaks and at the end of workday.

Skin and body protection: Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Wear the following personal protective equipment:
- If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.
- Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

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 BS 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**: yellow
- **Odour**: strong
- **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**: 43 °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: 0.96 - 1.02
Density: No data available
Solubility(ies)
  Water solubility: No data available
  Partition coefficient: n-octanol/water: No data available
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: 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: 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

Toxic if swallowed or in contact with skin. Harmful if inhaled.

Product:

Acute oral toxicity: Acute toxicity estimate: 70.32 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: 1.64 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity: Acute toxicity estimate: 376.23 mg/kg
Method: Calculation method

Components:

Solvent naphtha (petroleum), light aromatic:

Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity: LC50 (Rat): > 5.61 mg/l
Exposure time: 4 h
Test atmosphere: vapour

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

Ethion:

Acute oral toxicity: LD50 (Rat): 13 mg/kg

Acute inhalation toxicity: LC50 (Rat): 0.450 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity: LD50 (Rat): 62 mg/kg

Chlorpyrifos:

Acute oral toxicity: LD50 (Rat): 82 mg/kg
# Acute Inhalation Toxicity

- **LC50 (Rat):** 0.385 mg/l
- **Exposure time:** 4 h
- **Test atmosphere:** dust/mist

# Acute Dermal Toxicity

- **LD50 (Rat):** 1,250 - 2,000 mg/kg

---

## 2-Methyl-1-propanol:

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>LD50 (Rat)</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>Acute toxicity</td>
<td>3.350 mg/kg</td>
<td>OECD Test Guideline 401</td>
</tr>
<tr>
<td>Inhale</td>
<td>Acute toxicity</td>
<td>&gt; 24.6 mg/l</td>
<td>OECD Test Guideline 403</td>
</tr>
</tbody>
</table>

# Acute Inhalation Toxicity

- **LC50 (Rat):** > 24.6 mg/l
- **Exposure time:** 4 h
- **Test atmosphere:** vapour

# Acute Dermal Toxicity

- **LD50 (Rabbit):** 2,460 mg/kg

---

## (S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>LD50 (Rat): 57 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>Acute toxicity</td>
<td>EC Directive 92/69/EEC B.1 Acute Toxicity (Oral)</td>
</tr>
</tbody>
</table>

# Acute Inhalation Toxicity

- **LC50 (Rat):** > 1.16 - 1.21 mg/l
- **Exposure time:** 4 h
- **Test atmosphere:** dust/mist

# Acute Dermal Toxicity

- **LD50 (Rabbit):** > 2,000 mg/kg

---

## Hydrocarbons, C10, aromatics, <1% naphthalene:

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>LD50 (Rat): &gt; 5,000 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>Acute toxicity</td>
<td>OECD Test Guideline 420</td>
</tr>
<tr>
<td>Inhale</td>
<td>Acute toxicity</td>
<td>OECD Test Guideline 403</td>
</tr>
</tbody>
</table>

# Acute Dermal Toxicity

- **LD50 (Rabbit):** > 2,000 mg/kg

---

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

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>LD50 (Rat): &gt; 6,000 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>Acute toxicity</td>
<td>OECD Test Guideline 401</td>
</tr>
</tbody>
</table>

# Acute Dermal Toxicity

- **LD50 (Rat):** > 2,000 mg/kg
Skin corrosion/irritation
Causes skin irritation.

**Components:**

**Solvent naphtha (petroleum), light aromatic:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

**Ethion:**
Species: Rabbit
Result: Mild skin irritation

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

**2-Methyl-1-propanol:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Species: Rabbit
Result: Skin irritation

**Hydrocarbons, C10, aromatics, <1% naphthalene:**
Assessment: Repeated exposure may cause skin dryness or cracking.

**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 damage.

**Components:**

**Solvent naphtha (petroleum), light aromatic:**
Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation

Ethion:
Result: No eye irritation

Chlorpyrifos:
Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation

2-Methyl-1-propanol:
Species: Rabbit
Method: OECD Test Guideline 405
Result: Irreversible effects on the eye

(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Species: Rabbit
Result: No eye irritation

Remarks: Based on data from similar materials

Hydrocarbons, C10, aromatics, <1% naphthalene:
Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

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
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Components:
Solvent naphtha (petroleum), light aromatic:
Test Type: Buehler Test
Exposure routes: Skin contact
Species: Guinea pig
Result: negative
Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Ethion:
Exposure routes: Skin contact
Species: Guinea pig
Result: negative

Chlorpyrifos:
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

2-Methyl-1-propanol:
Exposure routes: Skin contact
Species: Guinea pig
Result: negative
Remarks: Based on data from similar materials

(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Hydrocarbons, C10, aromatics, <1% naphthalene:
Exposure routes: Skin contact
Species: Guinea pig
Result: negative
Remarks: Based on data from similar materials

2,6-Di-tert-butyl-p-cresol:
Exposure routes: Human repeat insult patch test (HRIPT)
Species: Humans
Result: negative

Germ cell mutagenicity
May cause genetic defects.

Components:
Solvent naphtha (petroleum), light aromatic:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
### Ethion / Chlorpyrifos / Alpha-Cypermethrin 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>

**Test Type:** In vitro mammalian cell gene mutation test  
Result: positive

**Genotoxicity in vivo**  
Test Type: Sister chromatid exchange analysis in spermatagonia  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: positive

**Germ cell mutagenicity- Assessment**  
Positive result(s) from in vivo heritable germ cell mutagenicity tests in mammals

### Ethion:

**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)  
Result: negative

**Test Type:** In vitro sister chromatid exchange assay in mammalian cells  
Result: negative

**Test Type:** in vitro micronucleus test  
Result: positive

**Genotoxicity in vivo**  
Test Type: Chromosomal aberration  
Species: Rat  
Result: negative

**Test Type:** In vivo micronucleus test  
Species: Mouse  
Result: positive

**Germ cell mutagenicity- Assessment**  
Weight of evidence does not support classification as a germ cell mutagen.

### Chlorpyrifos:

**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)  
Result: positive

**Genotoxicity in vivo**  
Test Type: In vivo mammalian alkaline comet assay  
Species: Rat  
Result: positive
Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Mouse
Result: negative

Germ cell mutagenicity - Assessment: Weight of evidence does not support classification as a germ cell mutagen.

2-Methyl-1-propanol:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: In vitro mammalian cell gene mutation test
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

(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

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

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

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

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 474
Hydrocarbons, C10, aromatics, <1% naphthalene:
Genotoxicity in vitro: Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo: Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Result: negative
Remarks: Based on data from similar materials

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
May cause cancer.

Components:
Solvent naphtha (petroleum), light aromatic:
Species: Mouse
Application Route: Skin contact
Exposure time: 2 Years
Result: positive

Carcinogenicity - Assessment: Sufficient evidence of carcinogenicity in animal experiments
Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

Version: 3.3  Revision Date: 23.03.2020  SDS Number: 937672-00008  Date of last issue: 13.09.2019  Date of first issue: 12.10.2016

Ethion:
Species: Rat  Application Route: Ingestion  Exposure time: 18 Months  Result: negative
Species: Mouse  Application Route: Ingestion  Exposure time: 24 Months  Result: negative

Chlorpyrifos:
Species: Rat  Application Route: Ingestion  Exposure time: 2 Years  Result: negative
Species: Dog  Application Route: Ingestion  Exposure time: 2 Years  Result: negative

(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Species: Rat  Application Route: Ingestion  Exposure time: 2 Years  Result: negative

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

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

Components:
Solvent naphtha (petroleum), light aromatic:
Effects on fertility: Test Type: Reproduction/Developmental toxicity screening test  Species: Rat  Application Route: inhalation (vapour)  Result: negative
Effects on foetal development: Test Type: Embryo-foetal development  Species: Rat  Application Route: inhalation (vapour)
Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

Result: negative

**Ethion:**
Effects on fertility : Test Type: Three-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

**Chlorpyrifos:**
Effects on fertility : Test Type: Fertility
Species: Mouse
Application Route: Ingestion
Result: positive

Effects on foetal development : Test Type: Embryo-foetal development
Species: Mouse
Application Route: Intraperitoneal injection
Result: positive

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

**2-Methyl-1-propanol:**
Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Inhalation (vapour)
Method: OPPTS 870.3800
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Inhalation (vapour)
Method: OECD Test Guideline 414
Result: negative

**(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:**
Effects on fertility : Test Type: Three-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version | Revision Date: | SDS Number: | Date of last issue: | Date of first issue: |
---------|----------------|--------------|---------------------|---------------------|

Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative

Hydrocarbons, C10, aromatics, <1% naphthalene:
Effects on fertility: Test Type: Three-generation reproduction toxicity study
Species: Rat
Application Route: inhalation (vapour)
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development: Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

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 drowsiness or dizziness.
Causes damage to organs.

Components:
Solvent naphtha (petroleum), light aromatic:
Assessment: May cause drowsiness or dizziness.

Ethion:
Assessment: Causes damage to organs.

Chlorpyrifos:
Target Organs: Central nervous system
Assessment: Causes damage to organs.

2-Methyl-1-propanol:
Assessment: May cause respiratory irritation., May cause drowsiness or dizziness.
Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

(S)-α-Cyano-3-phenoxypbenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Assessment : May cause respiratory irritation.
Remarks : Based on harmonised classification in EU regulation 1272/2008, Annex VI

Hydrocarbons, C10, aromatics, <1% naphthalene:
Assessment : May cause drowsiness or dizziness.
Remarks : Based on data from similar materials

STOT - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Components:

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

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

(S)-α-Cyano-3-phenoxypbenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Exposure routes : Ingestion
Target Organs : Central nervous system
Assessment : Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

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:

Solvent naphtha (petroleum), light aromatic:
Species : Rat
LOAEL : 500 mg/kg
Application Route : Ingestion
Exposure time : 28 Days

Ethion:
Species : Dog
Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue: 13.09.2019</th>
<th>Date of first issue: 12.10.2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3</td>
<td>23.03.2020</td>
<td>937672-00008</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOAEL**
- Application Route: Ingestion
- Exposure time: 90 Days

**Chlorpyrifos:**
- Species: Rat
- LOAEL: 1 mg/kg
- Application Route: Ingestion
- Exposure time: 13 Weeks

**2-Methyl-1-propanol:**
- Species: Rat
- NOAEL: > 1,450 mg/kg
- Application Route: Ingestion
- Exposure time: 90 Days
- Method: OECD Test Guideline 408

**(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:**
- Species: Dog
- NOAEL: 3.5 mg/kg
- LOAEL: 13.3 mg/kg
- Application Route: Ingestion
- Exposure time: 90 Days

**Hydrocarbons, C10, aromatics, <1% naphthalene:**
- Species: Rat
- NOAEL: 300 mg/kg
- Application Route: Ingestion
- Exposure time: 13 Weeks
- Remarks: Based on data from similar materials

**2,6-Di-tert-butyl-p-cresol:**
- Species: Rat
- NOAEL: 25 mg/kg
- Application Route: Ingestion
- Exposure time: 22 Months

**Aspiration toxicity**
May be fatal if swallowed and enters airways.

**Product:**
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.
Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Components:

Solvent naphtha (petroleum), light aromatic:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

2-Methyl-1-propanol:
The substance or mixture causes concern owing to the assumption that it causes a human aspiration toxicity hazard.

Hydrocarbons, C10, aromatics, <1% naphthalene:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Experience with human exposure

Components:

Ethion:
Ingestion: Symptoms: Blurred vision, Dizziness, Headache

Chlorpyrifos:
Inhalation: Symptoms: Headache, Nausea, Vomiting
Ingestion: Symptoms: Cyanosis, Diarrhoea

SECTION 12: Ecological information

12.1 Toxicity

Components:

Solvent naphtha (petroleum), light aromatic:
Toxicity to fish: LC50 (Pimephales promelas (fathead minnow)): 8.2 mg/l
  Exposure time: 96 h
  Test substance: Water Accommodated Fraction

Toxicity to daphnia and other aquatic invertebrates: EL50 (Daphnia magna (Water flea)): 4.5 mg/l
  Exposure time: 48 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants:
  EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l
  Exposure time: 96 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 201

  NOELR (Pseudokirchneriella subcapitata (microalgae)): 0.5 mg/l
  Exposure time: 96 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 201
Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):

Ethion:
Toxicity to fish:
- LC50 (Oncorhynchus mykiss (rainbow trout)): 0.18 mg/l
  Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
- EC50: 0.056 - 7.7 µg/l
  Exposure time: 48 h

M-Factor (Acute aquatic toxicity): 10,000

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

Chlorpyrifos:
Toxicity to fish:
- LC50 (Menidia menidia (Atlantic silverside)): 0.53 µg/l
  Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
- LC50 (Daphnia sp. (water flea)): 0.035 µg/l
  Exposure time: 48 h

Toxicity to algae/aquatic plants:
- EC50 (Skeletonema costatum (marine diatom)): 298 µg/l
  Exposure time: 72 h

M-Factor (Acute aquatic toxicity): 10,000

Toxicity to fish (Chronic toxicity):
- NOEC: 0.003 mg/l
  Exposure time: 7 d
  Species: Pimephales promelas (fathead minnow)

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

2-Methyl-1-propanol:
Toxicity to fish:
- LC50 (Pimephales promelas (fathead minnow)): 1,430 mg/l
  Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
- EC50 (Daphnia pulex (Water flea)): 1,100 mg/l
  Exposure time: 48 h

Toxicity to algae/aquatic plants:
- ErC50 (Pseudokirchneriella subcapitata (green algae)): 1,799 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201
SAFETY DATA SHEET  
according to Regulation (EC) No. 1907/2006

Ethion / Chlorpyrifos / Alpha-Cypermethrin  
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>

**NOEC (Pseudokirchneriella subcapitata (green algae)):** 117 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):**  
NOEC: 20 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

**(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:**

<table>
<thead>
<tr>
<th>Toxicity to fish</th>
<th>LC50 (Cyprinus carpio (Carp)): 0.00084 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>96 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 203</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>EC50 (Daphnia magna (Water flea)): 0.0003 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>48 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 202</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toxicity to algae/aquatic plants</th>
<th>ErC50 (Pseudokirchneriella subcapitata (green algae)): &gt; 1 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>72 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 201</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toxicity to algae/aquatic plants</th>
<th>EC10 (Pseudokirchneriella subcapitata (green algae)): &gt; 1 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>72 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 201</td>
</tr>
</tbody>
</table>

M-Factor (Acute aquatic toxicity): 1,000

Toxicity to fish (Chronic toxicity):  
NOEC: 0.03 µg/l  
Exposure time: 34 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)

M-Factor (Chronic aquatic toxicity): 1,000

**Hydrocarbons, C10, aromatics, <1% naphthalene:**

<table>
<thead>
<tr>
<th>Toxicity to fish</th>
<th>LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>96 h</td>
</tr>
<tr>
<td>Test substance</td>
<td>Water Accommodated Fraction</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 203</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>EL50 (Daphnia magna (Water flea)): 3 - 10 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>48 h</td>
</tr>
</tbody>
</table>
### Ethion / Chlorpyrifos / Alpha-Cypermethrin 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>

Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

**Toxicity to algae/aquatic plants**
- EL50 (Pseudokirchneriella subcapitata (green algae)): > 1 - 3 mg/l
  - Exposure time: 72 h
  - Test substance: Water Accommodated Fraction
  - Method: OECD Test Guideline 201
  - Remarks: Based on data from similar materials

**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

**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:

Solvent naphtha (petroleum), light aromatic:
Biodegradability: Result: Inherently biodegradable.
Biodegradation: 94 %
Exposure time: 25 d

Ethion:
Biodegradability: Result: not rapidly degradable

Chlorpyrifos:
Biodegradability: Result: not rapidly degradable

2-Methyl-1-propanol:
Biodegradability: Result: Readily biodegradable.
Biodegradation: 70 - 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Biodegradability: Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Hydrocarbons, C10, aromatics, <1% naphthalene:
Biodegradability: Result: Not readily biodegradable.
Biodegradation: 49.56 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

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:

Ethion:
Partition coefficient: n-octanol/water: log Pow: 5.07
Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

Chlorpyrifos:
Bioaccumulation: Species: Pimephales promelas (fathead minnow)
Bioconcentration factor (BCF): 23,000

Partition coefficient: n-octanol/water: log Pow: 5

2-Methyl-1-propanol:
Partition coefficient: n-octanol/water: log Pow: 1

(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Bioaccumulation: Species: Fish
Bioconcentration factor (BCF): 910

Partition coefficient: n-octanol/water: log Pow: 6.94

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
No data available

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

| ADN       | UN 1992 |
| ADR       | UN 1992 |
| RID       | UN 1992 |
| IMDG      | UN 1992 |
| IATA      | UN 1992 |

14.2 UN proper shipping name

| ADN       | FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion) |
| ADR       | FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion) |
| RID       | FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion) |
| IMDG      | FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion, Chlorpyrifos) |
| IATA      | Flammable liquid, toxic, n.o.s. (Solvent naphtha (petroleum), light aromatic, Ethion) |

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: FT1, Hazard Identification Number: 36, Labels: 3 (6.1) |
| ADR       | Packing group: III, Classification Code: FT1, Hazard Identification Number: 36, Labels: 3 (6.1), Tunnel restriction code: (D/E) |
| RID       | Packing group: III |
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version 3.3
Revision Date: 23.03.2020
SDS Number: 937672-00008
Date of last issue: 13.09.2019
Date of first issue: 12.10.2016

Classification Code : FT1
Hazard Identification Number : 36
Labels : 3 (6.1)

IMDG
Packing group : III
Labels : 3 (6.1)
EmS Code : F-E, S-D

IATA (Cargo)
Packing instruction (cargo aircraft) : 366
Packing instruction (LQ) : Y343
Packing group : III
Labels : Flammable Liquids, Toxic

IATA (Passenger)
Packing instruction (passenger aircraft) : 355
Packing instruction (LQ) : Y343
Packing group : III
Labels : Flammable Liquids, Toxic

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
Solvent naphtha (petroleum), light aromatic (Number on list 29, 28)
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
REACH - List of substances subject to authorisation (Annex XIV)
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

H3 STOT SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE
Quantity 1 50 t
Quantity 2 200 t

P5c FLAMMABLE LIQUIDS
5,000 t 50,000 t

E1 ENVIRONMENTAL HAZARDS
100 t 200 t

34 Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams), (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)
2,500 t 25,000 t

Other regulations:
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

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

H226: Flammable liquid and vapour.
H300: Fatal if swallowed.
H301: Toxic if swallowed.
H304: May be fatal if swallowed and enters airways.
H310: Fatal in contact with skin.
H312: Harmful in contact with skin.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H330: Fatal if inhaled.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H340: May cause genetic defects.
H350: May cause cancer.
H360FD: May damage fertility. May damage the unborn child.
H370: Causes damage to organs.
H372: Causes damage to organs through prolonged or repeated exposure.
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.
H411: 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
Asp. Tox.: Aspiration hazard
Carc.: Carcinogenicity
Eye Dam.: Serious eye damage
Flam. Liq.: Flammable liquids
Muta.: Germ cell mutagenicity
Repr.: Reproductive toxicity
Skin Irrit.: Skin irritation
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
GB EH40: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL: Short-term exposure limit (15-minute reference period)

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

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version 3.3
Revision Date: 23.03.2020
SDS Number: 937672-00008
Date of last issue: 13.09.2019
Date of first issue: 12.10.2016

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); ErCx - 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:
Classification procedure:

<table>
<thead>
<tr>
<th>Category</th>
<th>Code</th>
<th>Description</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 3</td>
<td>H226</td>
<td>Based on product data or assessment</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3</td>
<td>H301</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>H332</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3</td>
<td>H311</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>H315</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>H318</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>Muta. 1B</td>
<td>H340</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>Carc. 1B</td>
<td>H350</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>Repr. 1B</td>
<td>H360FD</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>STOT SE 1</td>
<td>H370</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>H336</td>
<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>STOT RE 1</td>
<td>H372</td>
<td>Calculation method</td>
<td></td>
</tr>
</tbody>
</table>
Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

Asp. Tox. 1 H304 Based on product data or assessment
Aquatic Acute 1 H400 Calculation method
Aquatic Chronic 1 H410 Calculation method

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.

GB / EN