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
              Kilsheelan
              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 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.
   Short-term (acute) aquatic hazard, Category 1 : H400: Very toxic to aquatic life.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version 4.4 Revision Date: 27.08.2021 SDS Number: 937673-00011 Date of last issue: 09.04.2021
Date of first issue: 12.10.2016

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)

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.
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

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.

Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<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>
<td></td>
<td></td>
<td></td>
<td></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 (Central nervous system) STOT RE 1; H372 (Central nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10,000 M-Factor (Chronic aquatic toxicity): 10,000</td>
<td>&gt;= 10 - &lt; 20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

<table>
<thead>
<tr>
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</tr>
</thead>
</table>

#### Acute toxicity estimate
- **Acute oral toxicity**: 13 mg/kg
- **Acute inhalation toxicity (dust/mist)**: 0.45 mg/l
- **Acute dermal toxicity**: 62 mg/kg

#### Chlorpyrifos

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS Number</th>
<th>Acute toxicity estimate</th>
<th>Hazard Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2921-88-2</td>
<td>Acute Tox. 3; H301</td>
<td></td>
</tr>
<tr>
<td></td>
<td>220-864-4</td>
<td>Acute Tox. 2; H330</td>
<td></td>
</tr>
<tr>
<td></td>
<td>015-084-00-4</td>
<td>Acute Tox. 4; H312</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repr. 1B; H360FD</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT SE 1; H370</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Central nervous system)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT RE 1; H372</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Central nervous system)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Acute 1; H400</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Chronic 1; H410</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M-Factor (Acute aquatic toxicity): 10,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M-Factor (Chronic aquatic toxicity): 10,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity estimate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute oral toxicity: 82 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute inhalation toxicity (dust/mist): 0.385 mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute dermal toxicity: 1,250 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS Number</th>
<th>Hazard Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>78-83-1</td>
<td>Flam. Liq. 3; H226</td>
</tr>
<tr>
<td></td>
<td>201-148-0</td>
<td>Skin Irrit. 2; H315</td>
</tr>
<tr>
<td></td>
<td>603-108-00-1</td>
<td>Eye Dam. 1; H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT SE 3; H335</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT SE 3; H336</td>
</tr>
<tr>
<td></td>
<td>67375-30-8</td>
<td>Acute Tox. 3; H301</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute Tox. 4; H332</td>
</tr>
</tbody>
</table>

#### Other Ingredients

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS Number</th>
<th>Hazard Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1R, 3R)-3-(2,2-dichlorovinyl)-2,2-</td>
<td>&gt;= 2.5 - &lt; 10</td>
</tr>
</tbody>
</table>

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SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical attention.

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

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

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

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

5.2 Special hazards arising from the substance or mixture

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

Hazardous combustion products:
- Carbon oxides
- 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 (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).
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

<table>
<thead>
<tr>
<th>Version</th>
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<tr>
<td>4.4</td>
<td>27.08.2021</td>
<td>937673-00011</td>
<td>Date of first issue: 12.10.2016</td>
</tr>
</tbody>
</table>

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 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.
- Use explosion-proof electrical, ventilating and lighting equipment.

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.
- Non-sparking tools should be used.
- Keep container tightly closed.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Take precautionary measures against static discharges.
- 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 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.

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
- Flammable solids
- Pyrophoric liquids
- Pyrophoric solids
- Self-heating substances and mixtures
- Substances and mixtures, which in contact with water, emit flammable gases
- Explosives
- Gases

7.3 Specific end use(s)

Specific use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

### Occupational Exposure Limits

<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>Ethion</td>
<td>563-12-2</td>
<td>OELV - 8 hrs (TWA) (Inhalable fraction and vapour)</td>
<td>0.05 mg/m3</td>
<td>IE OEL</td>
</tr>
<tr>
<td>Chlorpyrifos</td>
<td>2921-88-2</td>
<td>OELV - 8 hrs (TWA) (Inhalable fraction and vapour)</td>
<td>0.1 mg/m3</td>
<td>IE OEL</td>
</tr>
<tr>
<td>2-Methyl-1-propanol</td>
<td>78-83-1</td>
<td>OELV - 15 min (STEL)</td>
<td>75 ppm 225 mg/m3</td>
<td>IE OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OELV - 8 hrs (TWA)</td>
<td>50 ppm 150 mg/m3</td>
<td>IE OEL</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>128-37-0</td>
<td>OELV - 8 hrs (TWA)</td>
<td>2 mg/m3</td>
<td>IE OEL</td>
</tr>
</tbody>
</table>

Further information: Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

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<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/m^3</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>55 mg/m^3</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/m^3</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/m^3</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>Hydrocarbons, C10, aromatics, &lt;1% naphthalene</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>151 mg/m^3</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>12.5 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>32 mg/m^3</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>7.5 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>7.5 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>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.
Use explosion-proof electrical, ventilating and lighting equipment.

**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 I.S. EN 166 |

| Hand protection | Chemical-resistant gloves |

| 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 I.S. 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**

| Physical state | liquid |
| Colour | yellow |
| Odour | strong |
| Odour Threshold | No data available |
| Melting point/freezing point | No data available |
| Initial boiling point and boiling | No data available |
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<thead>
<tr>
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</tr>
</thead>
</table>

- Flammability (solid, gas): Not applicable
- Flammability (liquids): Not applicable
- Upper explosion limit / Upper flammability limit: No data available
- Lower explosion limit / Lower flammability limit: No data available
- Flash point: 43 °C
- Auto-ignition temperature: No data available
- Decomposition temperature: No data available
- pH: No data available
- Viscosity, kinematic: No data available
- Water solubility: No data available
- Partition coefficient: n-octanol/water: No data available
- Vapour pressure: No data available
- Relative density: 0.96 - 1.02
- Density: No data available
- Relative vapour density: No data available
- Particle size: No data available

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: 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 hazard classes as defined in Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Information on likely routes of exposure</th>
<th>Inhalation</th>
<th>Skin contact</th>
<th>Ingestion</th>
<th>Eye contact</th>
</tr>
</thead>
</table>

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
### Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

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<thead>
<tr>
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</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Ethion:</th>
<th>Chlorpyrifos:</th>
<th>2-Methyl-1-propanol:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute inhalation toxicity</strong></td>
<td>LC50 (Rat): &gt; 5.61 mg/l</td>
<td>LC50 (Rat): 0.450 mg/l</td>
<td>LD50 (Rat): 3,350 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Exposure time: 4 h</td>
<td>Exposure time: 4 h</td>
<td>Method: Calculation method</td>
</tr>
<tr>
<td></td>
<td>Test atmosphere: vapour</td>
<td>Test atmosphere: dust/mist</td>
<td></td>
</tr>
<tr>
<td><strong>Acute dermal toxicity</strong></td>
<td>LD50 (Rabbit): &gt; 2,000 mg/kg</td>
<td>LD50 (Rat): 62 mg/kg</td>
<td>LD50 (Rat): 1,250 - 2,000 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity estimate: 62 mg/kg</td>
<td>Acute toxicity estimate: 1,250 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Method: Calculation method</td>
<td>Method: Calculation method</td>
</tr>
<tr>
<td><strong>Ethion:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute oral toxicity</td>
<td>LD50 (Rat): 13 mg/kg</td>
<td>LD50 (Rat): 82 mg/kg</td>
<td>LD50 (Rat): 3,350 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Acute toxicity estimate: 13 mg/kg</td>
<td>Acute toxicity estimate: 82 mg/kg</td>
<td>Method: Calculation method</td>
</tr>
<tr>
<td><strong>Acute inhalation toxicity</strong></td>
<td>LC50 (Rat): 0.450 mg/l</td>
<td>LC50 (Rat): 0.385 mg/l</td>
<td>LC50 (Rat): &gt; 24.6 mg/l</td>
</tr>
<tr>
<td></td>
<td>Exposure time: 4 h</td>
<td>Exposure time: 4 h</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test atmosphere: dust/mist</td>
<td>Test atmosphere: dust/mist</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute toxicity estimate: 0.45 mg/l</td>
<td>Acute toxicity estimate: 0.385 mg/l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Method: Calculation method</td>
<td>Method: Calculation method</td>
<td></td>
</tr>
<tr>
<td><strong>Acute dermal toxicity</strong></td>
<td>LD50 (Rat): 62 mg/kg</td>
<td>LD50 (Rat): 1,250 - 2,000 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute toxicity estimate: 62 mg/kg</td>
<td>Acute toxicity estimate: 1,250 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Method: Calculation method</td>
<td>Method: Calculation method</td>
<td></td>
</tr>
</tbody>
</table>

**Chlorpyrifos:**

- **Acute oral toxicity**
  - LD50 (Rat): 82 mg/kg
  - Acute toxicity estimate: 82 mg/kg
  - Method: Calculation method

- **Acute inhalation toxicity**
  - LC50 (Rat): 0.385 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Acute toxicity estimate: 0.385 mg/l
  - Test atmosphere: dust/mist
  - Method: Calculation method

- **Acute dermal toxicity**
  - LD50 (Rat): 1,250 - 2,000 mg/kg
  - Acute toxicity estimate: 1,250 mg/kg
  - Method: Calculation method

**2-Methyl-1-propanol:**

- **Acute oral toxicity**
  - LD50 (Rat): 3,350 mg/kg
  - Method: OECD Test Guideline 401

- **Acute inhalation toxicity**
  - LC50 (Rat): > 24.6 mg/l

---

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 toxicity estimate: 13 mg/kg
  - Method: Calculation method

- Acute inhalation toxicity: LC50 (Rat): 0.450 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Acute toxicity estimate: 0.45 mg/l
  - Test atmosphere: dust/mist
  - Method: Calculation method

- Acute dermal toxicity: LD50 (Rat): 62 mg/kg
  - Acute toxicity estimate: 62 mg/kg
  - Method: Calculation method

Chlorpyrifos:

- Acute oral toxicity: LD50 (Rat): 82 mg/kg
  - Acute toxicity estimate: 82 mg/kg
  - Method: Calculation method

- Acute inhalation toxicity: LC50 (Rat): 0.385 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Acute toxicity estimate: 0.385 mg/l
  - Test atmosphere: dust/mist
  - Method: Calculation method

- Acute dermal toxicity: LD50 (Rat): 1,250 - 2,000 mg/kg
  - Acute toxicity estimate: 1,250 mg/kg
  - Method: Calculation method

2-Methyl-1-propanol:

- Acute oral toxicity: LD50 (Rat): 3,350 mg/kg
  - Method: OECD Test Guideline 401

- 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
Method: OECD Test Guideline 402

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

Acute oral toxicity:
LD50 (Rat): 57 mg/kg
Method: EC Directive 92/69/EEC B.1 Acute Toxicity (Oral)
Acute toxicity estimate: 57 mg/kg
Method: Calculation method

Acute inhalation toxicity:
LC50 (Rat): > 1.16 - 1.21 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute toxicity estimate: 1.160116 mg/l
Test atmosphere: dust/mist
Method: Calculation method

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

Hydrocarbons, C10, aromatics, <1% naphthalene:

Acute oral toxicity:
LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 420
Remarks: Based on data from similar materials

Acute inhalation toxicity:
LC50 (Rat): > 4.778 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: Based on data from similar materials

Acute dermal toxicity:
LD50 (Rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

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

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

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

**Components:**

**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-phenoxycarbonyl (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:**
Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation
Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

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

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

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

2,6-Di-tert-butyl-p-cresol:
Test Type: Human repeat insult patch test (HRIPT)
Exposure routes: Skin contact
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

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

Genotoxicity in vivo:
Test Type: Sister chromatid exchange analysis in spermato-
**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**:  
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
  Result: negative
- Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo
  Species: Rat
# Safety Data Sheet

**Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation**

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</thead>
</table>

Application Route: Ingestion
Result: negative

**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)
- Species: Rat
- Application Route: inhalation (vapour)
- 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:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse</td>
<td>Skin contact</td>
<td>2 Years</td>
<td>positive</td>
</tr>
</tbody>
</table>

Carcinogenicity - Assessment: Sufficient evidence of carcinogenicity in animal experiments

**Ethion:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Application Route</th>
<th>Exposure time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>Ingestion</td>
<td>18 Months</td>
<td>negative</td>
</tr>
</tbody>
</table>
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:
Species: Rat
Application Route: inhalation (vapour)
Result: negative

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

Effects on foetal development:  
Species: Rat  
Application Route: Ingestion  
Result: negative

Chlorpyrifos:

Effects on fertility:  
Species: Mouse  
Application Route: Ingestion  
Result: positive

Effects on 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:  
Species: Rat  
Application Route: Inhalation (vapour)  
Method: OPPTS 870.3800  
Result: negative

Effects on 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:  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on foetal development:  
Species: Rat  
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.

(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:
Assessment: May cause respiratory irritation.
Remarks: Based on harmonised classification in EU regulation
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-phenoxybenzyl (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
NOAEL: 0.05 mg/kg
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.

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.

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:**

**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
# Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

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

- **Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**
  - NOELR: 2.6 mg/l
  - Exposure time: 21 d
  - Species: Daphnia magna (Water flea)
  - Test substance: Water Accommodated Fraction
  - Method: OECD Test Guideline 211

### 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

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:

Toxicity to fish: LC50 (Cyprinus carpio (Carp)): 0.00084 mg/l Exposure time: 96 h Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 0.0003 mg/l Exposure time: 48 h Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants: ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

EC10 (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

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:

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

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 (Daphnia magna (Water flea)): 0.48 mg/l
- Exposure time: 48 h
- Test substance: Water Accommodated Fraction
- Method: OECD Test Guideline 202
- Remarks: Based on data from similar materials

**Toxicity to algae/aquatic plants**
- ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0.24 mg/l
- Exposure time: 72 h
- Test substance: Water Accommodated Fraction
- Method: OECD Test Guideline 201
- NOEC (Pseudokirchneriella subcapitata (green algae)): 0.24 mg/l
- Exposure time: 72 h
- Method: OECD Test Guideline 201

**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
- Test substance: Water Accommodated Fraction
- 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):**
- 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- log Pow: 5.07
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<tr>
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octanol/water

**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:**  
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

**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. 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 or ID number

<table>
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<tr>
<th>ADN</th>
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<tr>
<td>ADR</td>
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<tr>
<td>RID</td>
<td>UN 1992</td>
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<tr>
<td>IMDG</td>
<td>UN 1992</td>
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<tr>
<td>IATA</td>
<td>UN 1992</td>
</tr>
</tbody>
</table>

14.2 UN proper shipping name

<table>
<thead>
<tr>
<th>ADN</th>
<th>FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion)</th>
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<tbody>
<tr>
<td>ADR</td>
<td>FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion)</td>
</tr>
<tr>
<td>RID</td>
<td>FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion)</td>
</tr>
<tr>
<td>IMDG</td>
<td>FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion, Chlorpyrifos)</td>
</tr>
<tr>
<td>IATA</td>
<td>Flammable liquid, toxic, n.o.s. (Solvent naphtha (petroleum), light aromatic, Ethion)</td>
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14.3 Transport hazard class(es)

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<thead>
<tr>
<th>ADN</th>
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<tbody>
<tr>
<td>ADR</td>
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<tr>
<td>RID</td>
<td>3</td>
</tr>
<tr>
<td>IMDG</td>
<td>3</td>
</tr>
</tbody>
</table>
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
- 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
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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

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):
  Not applicable

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

Regulation (EU) 2019/1021 on persistent organic pollutants (recast):
  Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals:
  Ethion

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


<table>
<thead>
<tr>
<th>H3</th>
<th>STOT SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE</th>
<th>Quantity 1</th>
<th>Quantity 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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 environ-</td>
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<td></td>
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<thead>
<tr>
<th>P5c</th>
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<table>
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<table>
<thead>
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<th>2,500 t</th>
<th>25,000 t</th>
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</thead>
</table>

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mental hazards as the products referred to in points (a) to (d)

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.

SECTION 16: Other information

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.
EUH066 : Repeated exposure may cause skin dryness or cracking.
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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
- IEC OEL: Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1

IE OEL / OELV - 8 hrs (TWA): Occupational exposure limit value (8-hour reference period)
IE OEL / OELV - 15 min (STEL): Occupational exposure limit value (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; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; 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; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative
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Further information
Sources of key data used to compile the Safety Data Sheet:

Classification of the mixture:
Classification procedure:
Flam. Liq. 3  H226  Based on product data or assessment
Acute Tox. 3  H301  Calculation method
Acute Tox. 4  H332  Calculation method
Acute Tox. 3  H311  Calculation method
Skin Irrit. 2  H315  Calculation method
Eye Dam. 1  H318  Calculation method
Muta. 1B  H340  Calculation method
Carc. 1B  H350  Calculation method
Repr. 1B  H360FD  Calculation method
STOT SE 1  H370  Calculation method
STOT SE 3  H336  Calculation method
STOT RE 1  H372  Calculation method
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.

IE / EN