SAFETY DATA SHEET

Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

Version 5.0 Revision Date: 27.08.2021 SDS Number: 935020-00010 Date of last issue: 10.10.2020
Date of first issue: 12.10.2016

Section 1: Identification

Product name: Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

Manufacturer or supplier's details

Company: MSD
Address: 33 Whakatiki Street - Private Bag 908 Upper Hutt - New Zealand
Telephone: +1-908-740-4000
Emergency telephone number: +1-908-423-6000
E-mail address: EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use
Recommended use: Veterinary product

Section 2: Hazard identification

GHS Classification

Flammable liquids: Category 3
Acute toxicity (Oral): Category 3
Acute toxicity (Inhalation): Category 4
Acute toxicity (Dermal): Category 3
Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 1
Germ cell mutagenicity: Category 1B
Carcinogenicity: Category 1B
Reproductive toxicity: Category 1B
Specific target organ toxicity - single exposure: Category 1 (Central nervous system)
Specific target organ toxicity - single exposure: Category 3
Specific target organ toxicity - repeated exposure: Category 1 (Central nervous system)
SAFETY DATA SHEET

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Aspiration hazard: Category 1

GHS label elements

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 (Central nervous system).
- H372 Causes damage to organs (Central nervous system) through prolonged or repeated exposure.

Precautionary statements:

Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233 Keep container tightly closed.
- P241 Use explosion-proof electrical/ventilating/lighting equipment.
- P242 Use non-sparking tools.
- P243 Take action to prevent static discharges.
- P260 Do not breathe mist or vapours.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

- P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
- P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
- 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.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/attention.

Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:
P501 Dispose of contents/container to an approved waste disposal plant.

Other hazards which do not result in classification
Vapours may form explosive mixture with air.

Section 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>&gt;= 30 -&lt; 60</td>
</tr>
<tr>
<td>Ethion</td>
<td>&gt;3 -&lt; 10</td>
</tr>
<tr>
<td>Chlorpyrifos</td>
<td>&gt;3 -&lt; 10</td>
</tr>
<tr>
<td>2-Methyl-1-propanol</td>
<td>&gt;3 -&lt; 10</td>
</tr>
<tr>
<td>(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>Hydrocarbons, C10, aromatics, &lt;1% naphthalene</td>
<td>&gt;1 -&lt;10</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>&lt; 10</td>
</tr>
</tbody>
</table>

Section 4: 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.

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.
| In case of eye contact | Wash clothing before reuse.  
|                       | Thoroughly clean shoes before reuse.  
| If swallowed          | 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.  
| Most important symptoms and effects, both acute and delayed | 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.  
| Protection of first-aiders | 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.  
| Notes to physician | 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).  

**Section 5: Fire-fighting measures**

| Suitable extinguishing media | Water spray  
|                             | Alcohol-resistant foam  
|                             | Carbon dioxide (CO2)  
|                             | Dry chemical  
| Unsuitable extinguishing media | High volume water jet  
| Specific hazards during fire-fighting | 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)  
| 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.  

Date of last issue: 10.10.2020  
Date of first issue: 12.10.2016
SAFETY DATA SHEET

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version 5.0  Revision Date: 27.08.2021  SDS Number: 935020-00010  Date of last issue: 10.10.2020
Date of first issue: 12.10.2016

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

Hazchem Code : 3W

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures : Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

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

Methods and materials for containment and 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.

Section 7: Handling and storage

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.

Conditions for safe storage:
- 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.

Materials to avoid:
- Do not store with the following product types:
  - Self-reactive substances and mixtures
  - Organic peroxides
  - Oxidizing agents
  - Flammable gases
  - Pyrophoric liquids
  - Pyrophoric solids
  - Self-heating substances and mixtures
  - Poisonous gases
  - Explosives

---

### Section 8: Exposure controls/personal protection

#### Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>WES-TWA</td>
<td>300 ppm 890 mg/m³</td>
<td>NZ OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WES- STEL</td>
<td>500 ppm 1,480 mg/m³</td>
<td>NZ OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>200 mg/m³ (total hydrocarbon vapor)</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Ethion</td>
<td>563-12-2</td>
<td>TWA (Inhalable fraction and vapor)</td>
<td>0.05 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Chlorpyrifos</td>
<td>2921-88-2</td>
<td>WES-TWA</td>
<td>0.2 mg/m³</td>
<td>NZ OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further information: Skin absorption</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Inhalable fraction and vapor)</td>
<td>0.1 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td>2-Methyl-1-propanol</td>
<td>78-83-1</td>
<td>WES-TWA</td>
<td>50 ppm 152 mg/m³</td>
<td>NZ OEL</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version 5.0  Revision Date: 27.08.2021  SDS Number: 935020-00010  Date of last issue: 10.10.2020
Date of first issue: 12.10.2016

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Biological specimen</th>
<th>Sampling time</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpyrifos</td>
<td>2921-88-2</td>
<td>Cholines-terase activity</td>
<td>Blood</td>
<td>60 % of baseline</td>
<td>NZ BEI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cholines-terase activity</td>
<td>Blood</td>
<td>80 % of baseline</td>
<td>NZ BEI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cholines-terase activity</td>
<td>Blood</td>
<td>75 % of baseline</td>
<td>NZ BEI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acetylcholinesterase activity</td>
<td>In red blood cells</td>
<td>End of shift</td>
<td>70 % of an individual's baseline</td>
<td>ACGIH BEI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Butyrylcholinesterase activity</td>
<td>In serum or plasma</td>
<td>End of shift</td>
<td>60 % of an individual's baseline</td>
<td>ACGIH BEI</td>
</tr>
</tbody>
</table>

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

Respiratory protection: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type: Combined particulates and organic vapour type

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.

Eye protection: Wear the following personal protective equipment: Chemical resistant goggles must be worn.

Further information: Skin sensitizer

TWA (Inhalable fraction and vapor) 2 mg/m3  ACGIH
If splashes are likely to occur, wear:
Face-shield

Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Section 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>strong</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>43 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.96 - 1.02</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>No data available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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.
Molecular weight: No data available
Particle size: No data available

Section 10: Stability and reactivity

Reactivity: Not classified as a reactivity hazard.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions:
- Flammable liquid and vapour.
- Vapours may form explosive mixture with air.
- Can react with strong oxidizing agents.
Conditions to avoid: Heat, flames and sparks.
Incompatible materials: Oxidizing agents
Hazardous decomposition products: No hazardous decomposition products are known.

Section 11: Toxicological information

Exposure routes:
- 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:**
- **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 inhalation toxicity** : LC50 (Rat): > 1.16 - 1.21 mg/l  
  Exposure time: 4 h  
  Test atmosphere: dust/mist
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
  Remarks: Based on data from similar materials

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
SAFETY DATA SHEET

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Version: 5.0  Revision Date: 27.08.2021  SDS Number: 935020-00010  Date of last issue: 10.10.2020

<table>
<thead>
<tr>
<th>Method</th>
<th>OECD Test Guideline 404</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Skin irritation</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Skin irritation</td>
</tr>
</tbody>
</table>

Hydrocarbons, C10, aromatics, <1% naphthalene:

| Assessment | Repeated exposure may cause skin dryness or cracking. |

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>OECD Test Guideline 404</td>
</tr>
<tr>
<td>Result</td>
<td>No skin irritation</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Solvent naphtha (petroleum), light aromatic:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>No eye irritation</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 405</td>
</tr>
</tbody>
</table>

Ethion:

| Result | No eye irritation |

Chlorpyrifos:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>No eye irritation</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 405</td>
</tr>
</tbody>
</table>

2-Methyl-1-propanol:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Irreversible effects on the eye</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 405</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>No eye irritation</td>
</tr>
</tbody>
</table>

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
Result: No eye irritation
Method: OECD Test Guideline 405
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)-a-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:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Maximisation Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

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

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

Chronic toxicity

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

Genotoxicity in vitro: Test Type: In vitro mammalian cell gene mutation test
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

Genotoxicity in vitro: Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: negative

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

Genotoxicity in vitro: Test Type: in vitro micronucleus test
Result: positive
**SAFETY DATA SHEET**  
Ethion / Chlorpyrifos / Alpha-Cypermethrin  
**Formulation**

Version 5.0  
Revision Date: 27.08.2021  
SDS Number: 935020-00010  
Date of last issue: 10.10.2020  
Date of first issue: 12.10.2016

---

**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
  Result: negative
- Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo
  Species: Rat
  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:
Species: Mouse
Application Route: Skin contact
Exposure time: 2 Years
Result: positive

Carcinogenicity - Assessment: Sufficient evidence of carcinogenicity in animal experiments

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:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Exposure time</td>
<td>22 Months</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

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)
  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
Effects on foetal development:
Species: Rat
Application Route: inhalation (vapour)
Method: OPPTS 870.3800
Result: negative

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:
Species: Rat
Application Route: Ingestion
Result: negative

Test Type: Three-generation reproduction toxicity study

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

Hydrocarbons, C10, aromatics, <1% naphthalene:

Test Type: Three-generation reproduction toxicity study

Effects on fertility:
Species: Rat
Application Route: inhalation (vapour)
Result: negative

Remarks: Based on data from similar materials

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

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

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

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

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

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

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

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

STOT - single exposure
May cause drowsiness or dizziness.
Causes damage to organs (Central nervous system).
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 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 (Central nervous system) 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.

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

Ecotoxicity

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
### Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

#### Version 5.0

**Revision Date:** 27.08.2021  
**SDS Number:** 935020-00010  
**Date of last issue:** 10.10.2020  
**Date of first issue:** 12.10.2016

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to algae/aquatic plants</strong></th>
</tr>
</thead>
</table>
| Method: OECD Test Guideline 202 | \( \text{EL50 (Pseudokirchneriella subcapitata (microalgae))}: 3.1 \text{ mg/l} \)  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  |
| NOELR (Pseudokirchneriella subcapitata (microalgae)): 0.5 \text{ mg/l}  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  |

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</strong></th>
</tr>
</thead>
</table>
| NOELR (Daphnia magna (Water flea)): 2.6 \text{ mg/l}  
Exposure time: 21 d  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 211  |

**Ethion:**

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to fish</strong></th>
</tr>
</thead>
</table>
| LC50 (Oncorhynchus mykiss (rainbow trout)): 0.18 \text{ mg/l}  
Exposure time: 96 h  |

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to daphnia and other aquatic invertebrates</strong></th>
</tr>
</thead>
</table>
| EC50: 0.056 - 7.7 \text{ µg/l}  
Exposure time: 48 h  |

**Chlorpyrifos:**

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to fish</strong></th>
</tr>
</thead>
</table>
| LC50 (Menidia menidia (Atlantic silverside)): 0.53 \text{ µg/l}  
Exposure time: 96 h  |

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to daphnia and other aquatic invertebrates</strong></th>
</tr>
</thead>
</table>
| LC50 (Daphnia sp. (water flea)): 0.035 \text{ µg/l}  
Exposure time: 48 h  |

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to algae/aquatic plants</strong></th>
</tr>
</thead>
</table>
| EC50 (Skeletonema costatum (marine diatom)): 298 \text{ µg/l}  
Exposure time: 72 h  |

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to fish (Chronic toxicity)</strong></th>
</tr>
</thead>
</table>
| NOEC (Pimephales promelas (fathead minnow)): 0.003 \text{ mg/l}  
Exposure time: 7 d  |

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

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to fish</strong></th>
</tr>
</thead>
</table>
| LC50 (Pimephales promelas (fathead minnow)): 1,430 \text{ mg/l}  
Exposure time: 96 h  |

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to daphnia and other aquatic invertebrates</strong></th>
</tr>
</thead>
</table>
| EC50 (Daphnia pulex (Water flea)): 1,100 \text{ mg/l}  
Exposure time: 48 h  |

<table>
<thead>
<tr>
<th><strong>Method</strong></th>
<th><strong>Toxicity to algae/aquatic plants</strong></th>
</tr>
</thead>
</table>
| ErC50 (Pseudokirchneriella subcapitata (green algae)): 1,799 \text{ mg/l}  
Exposure time: 72 h  
Method: OECD Test Guideline 201  |
| NOEC (Pseudokirchneriella subcapitata (green algae)): 117 |
**SAFETY DATA SHEET**

**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>
<tbody>
<tr>
<td>5.0</td>
<td>27.08.2021</td>
<td>935020-00010</td>
<td>10.10.2020</td>
<td>12.10.2016</td>
</tr>
</tbody>
</table>

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

- **(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
  - **Toxicity to fish (Chronic toxicity):**
    - NOEC (Pimephales promelas (fathead minnow)): 0.03 µg/l
    - Exposure time: 34 d
  - **Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):**
    - NOEC (Daphnia magna (Water flea)): 0.03 µg/l
    - Exposure time: 21 d

- **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
    - Method: OECD Test Guideline 203
    - Remarks: Based on data from similar materials
  - **Toxicity to daphnia and other aquatic invertebrates:**
    - EL50 (Daphnia magna (Water flea)): 3 - 10 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:**
    - 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

- **Toxicity to fish (Chronic toxicity)**: NOEC (Oryzias latipes (Japanese medaka)): 0.053 mg/l
  Exposure time: 30 d
  Method: OECD Test Guideline 210

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

- **Toxicity to microorganisms**: EC50: > 10,000 mg/l
  Exposure time: 3 h
  Method: OECD Test Guideline 209

**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
**Bioaccumulative potential**

**Ethion:**
- Partition coefficient: n-octanol/water: log Pow: 5.07

**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

**Bioaccumulation factor (BCF):**
- Species: Fish
  - Bioconcentration factor (BCF): 910
- Species: Cyprinus carpio (Carp)
  - Bioconcentration factor (BCF): 330 - 1,800
SAFETY DATA SHEET

Ethion / Chlorpyrifos / Alpha-Cypermethrin
Formulation

Partition coefficient: n-octanol/water
log Pow: 5.1

Mobility in soil
No data available

Other adverse effects
No data available

Section 13: Disposal considerations

Disposal methods
Waste from residues
Dispose of in accordance with local regulations.
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

International Regulations

UNRTDG
UN number: UN 1992
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion)
Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: 3 (6.1)

IATA-DGR
UN/ID No.: UN 1992
Proper shipping name: Flammable liquid, toxic, n.o.s. (Solvent naphtha (petroleum), light aromatic, Ethion)
Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: Flammable Liquids, Toxic
Packing instruction (cargo aircraft): 366
Packing instruction (passenger aircraft): 355

IMDG-Code
UN number: UN 1992
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion, Chlorpyrifos)
Class: 3
Subsidiary risk: 6.1
SAFETY DATA SHEET

Ethion / Chlorpyrifos / Alpha-Cypermethrin Formulation

Version 5.0  Revision Date: 27.08.2021  SDS Number: 935020-00010  Date of last issue: 10.10.2020

Date of first issue: 12.10.2016

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

National Regulations

NZS 5433
UN number: UN 1992
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Solvent naphtha (petroleum), light aromatic, Ethion)

Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: 3 (6.1)
Hazchem Code: 3W

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.

Section 15: Regulatory information

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

HSNO Approval Number
HSR100759 Veterinary Medicines Non dispersive Open System Application Group Standard 2017

HSW Controls
Certified handler certificate not required.
Tracking hazardous substance not required.
Refer to the Health and Safety at Work (Hazardous Substances) Regulations 2017, for further information.

The components of this product are reported in the following inventories:
AICS: not determined
DSL: not determined
IECSC: not determined

Section 16: Other information

Further information
Sources of key data used to: Internal technical data, data from raw material SDSs, OECD
## SAFETY DATA SHEET

### 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>
<tbody>
<tr>
<td>5.0</td>
<td>27.08.2021</td>
<td>935020-00010</td>
<td>10.10.2020</td>
<td>12.10.2016</td>
</tr>
</tbody>
</table>

compile the Safety Data Sheet

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

**Date format:** dd.mm.yyyy

**Full text of other abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>ACGIH BEI</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
<tr>
<td>NZ BEI</td>
<td>New Zealand. Biological Exposure Indices</td>
</tr>
<tr>
<td>NZ OEL</td>
<td>New Zealand. Workplace Exposure Standards for Atmospheric Contaminants</td>
</tr>
<tr>
<td>ACGIH / TWA</td>
<td>8-hour, time-weighted average</td>
</tr>
<tr>
<td>NZ OEL / WES-TWA</td>
<td>Workplace Exposure Standard - Time Weighted average</td>
</tr>
<tr>
<td>NZ OEL / WES-STEL</td>
<td>Workplace Exposure Standard - Short-Term Exposure Limit</td>
</tr>
</tbody>
</table>

**Alic** - Australian Inventory of Industrial Chemicals; **ANTT** - National Agency for Transport by Land of Brazil; **ASTM** - American Society for the Testing of Materials; **bw** - Body weight; **CMR** - Carcinogen, Mutagen or Reproductive Toxicant; **DIN** - Standard of the German Institute for Standardisation; **DSL** - Domestic Substances List (Canada); **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; **ERG** - Emergency Response Guide; **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.c.s.** - Not Otherwise Specified; **Nch** - Chilean Norm; **NO(A)EC** - No Observed (Adverse) Effect Concentration; **NO(A)EL** - No Observed (Adverse) Effect Level; **NOELR** - No Observable Effect Loading Rate; **NOM** - Official Mexican Norm; **NTP** - National Toxicology Program; **NZIoC** - New Zealand Inventory of Chemicals and Chemical Substances; **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; **SADT** - Self-Accelerating Decomposition Temperature; **SDS** - Safety Data Sheet; **TCSI** - Taiwan Chemical Substance Inventory; **TDG** - Transportation of Dangerous Goods; **TECI** - Thailand Existing Chemicals Inventory; **TSCA** - Toxic Substances Control Act (United States); **UN** - United Nations; **UNRTDG** - United Nations Recommendations on the Transport of Dangerous Goods; **vPvB** - Very Persistent and Very Bioaccumulative; **WHMIS** - Workplace Hazardous Materials Information System

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 mate-
rial 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 ap-
propriateness of the SDS material in the user’s end product, if applicable.

NZ / EN