

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

Version	Revision Date:	SDS Number:	Date of last issue: 28.09.2024
10.0	14.04.2025	935023-00020	Date of first issue: 12.10.2016

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**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 Sub-  
stance/Mixture : Veterinary product

Recommended restrictions  
on use : Not applicable

**1.3 Details of the supplier of the safety data sheet**

Company : MSD  
20 Spartan Road  
1619 Spartan, South Africa

Telephone : +27119239300

E-mail address of person  
responsible for the SDS : EHSDATASTEWARD@msd.com

**1.4 Emergency telephone number**

+1-908-423-6000

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**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
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	H360D: 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.

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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.

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.  
 H336 May cause drowsiness or dizziness.  
 H340 May cause genetic defects.  
 H350 May cause cancer.  
 H360D 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.  
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

#### Response:

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

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## 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.

Vapours may form explosive mixture with air.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Solvent naphtha (petroleum), light aromatic	64742-95-6 265-199-0 649-356-00-4	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	>= 50 - < 70
Ethion	563-12-2 209-242-3 015-047-00-2	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	>= 10 - < 20
Chlorpyrifos	2921-88-2 220-864-4 015-084-00-4	Acute Tox. 3; H301 Acute Tox. 4; H312 Repr. 1B; H360D STOT SE 1; H370 (Nervous system)	>= 2,5 - < 10

## SAFETY DATA SHEET



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		Aquatic Acute 1; H400 Aquatic Chronic 1; H410 <hr/> M-Factor (Acute aquatic toxicity): 10.000 M-Factor (Chronic aquatic toxicity): 10.000	
2-Methyl-1-propanol	78-83-1 201-148-0 603-108-00-1	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335 STOT SE 3; H336	>= 3 - < 10
(S)-α-Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate	67375-30-8 607-422-00-X	Acute Tox. 3; H301 Acute Tox. 4; H332 Skin Irrit. 2; H315 STOT SE 3; H335 STOT RE 2; H373 (Central nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 <hr/> M-Factor (Acute aquatic toxicity): 1.000 M-Factor (Chronic aquatic toxicity): 1.000	>= 2,5 - < 10
Hydrocarbons, C10, aromatics, <1% naphthalene	64742-94-5	STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 1 - < 2,5
2,6-Di-tert-butyl-p-cresol	128-37-0 204-881-4	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 <hr/> M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 1 - < 2,5

For explanation of abbreviations see section 16.

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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.<br>When symptoms persist or in all cases of doubt seek medical advice.  |
| Protection of first-aiders | : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).   |
| If inhaled                 | : If inhaled, remove to fresh air.<br>If not breathing, give artificial respiration.<br>If breathing is difficult, give oxygen.<br>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.<br>Get medical attention.<br>Wash clothing before reuse.<br>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.<br>If easy to do, remove contact lens, if worn.<br>Get medical attention immediately.  |
| If swallowed               | : If swallowed, DO NOT induce vomiting.<br>If vomiting occurs have person lean forward.<br>Call a physician or poison control centre immediately.<br>Rinse mouth thoroughly with water.<br>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.<br>May be fatal if swallowed and enters airways.<br>Causes skin irritation.<br>Causes serious eye damage.<br>Harmful if inhaled.<br>May cause drowsiness or dizziness.<br>May cause genetic defects.<br>May cause cancer.<br>May damage the unborn child.<br>Causes damage to organs.<br>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. |
|-----------|---|

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**SECTION 5: Firefighting measures****5.1 Extinguishing media**

Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : High volume water jet

**5.2 Special hazards arising from the substance or mixture**

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 (NO<sub>x</sub>)

**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.

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**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).

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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.

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**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

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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  
 Self-reactive substances and mixtures  
 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  
 Very acutely toxic substances and mixtures

## 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

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethion	563-12-2	TWA	4 µg/m <sup>3</sup> (OEB 4)	Internal
	Further information: Skin			
		Wipe limit	40 µg/100 cm <sup>2</sup>	Internal
Chlorpyrifos	2921-88-2	OEL-RL (inhalable fraction and vapour)	0,2 mg/m <sup>3</sup>	ZA OEL
	Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
2-Methyl-1-propanol	78-83-1	OEL-RL	100 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
2-Methyl-1-propanol	Workers	Inhalation	Long-term local ef-	310 mg/m <sup>3</sup>



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			fects	
	Consumers	Inhalation	Long-term local effects	55 mg/m3
2,6-Di-tert-butyl-p-cresol	Workers	Inhalation	Long-term systemic effects	3,5 mg/m3
	Workers	Dermal	Long-term systemic effects	0,5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,86 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,25 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	0,25 mg/kg bw/day
Hydrocarbons, C10, aromatics, <1% naphthalene	Workers	Inhalation	Long-term systemic effects	151 mg/m3
	Workers	Skin contact	Long-term systemic effects	12,5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	32 mg/m3
	Consumers	Skin contact	Long-term systemic effects	7,5 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	7,5 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
2,6-Di-tert-butyl-p-cresol	Fresh water	0,199 µg/l
	Intermittent use/release	0,02 µg/l
	Marine water	0,02 µg/l
	Sewage treatment plant	0,17 mg/l
	Fresh water sediment	0,0996 mg/kg dry weight (d.w.)
	Marine sediment	0,00996 mg/kg dry weight (d.w.)
	Soil	0,04769 mg/kg dry weight (d.w.)
	Oral (Secondary Poisoning)	8,33 mg/kg food

## 8.2 Exposure controls

### Engineering measures

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/face protection : Wear the following personal protective equipment:  
Chemical resistant goggles must be worn.  
If splashes are likely to occur, wear:  
Face-shield

Hand protection

Material : Chemical-resistant gloves

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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.
Filter type	:	Combined particulates and organic vapour type (A-P)

### SECTION 9: Physical and chemical properties

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

Appearance	:	liquid
Colour	:	yellow
Odour	:	strong
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	43 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available

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Relative vapour density	:	No data available
Relative density	:	0,96 - 1,02
Density	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

**9.2 Other information**

Molecular weight	:	No data available
Particle size	:	No data available

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**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.
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**10.4 Conditions to avoid**

Conditions to avoid	:	Heat, flames and sparks.
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**10.5 Incompatible materials**

Materials to avoid	:	Oxidizing agents
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**10.6 Hazardous decomposition products**

No hazardous decomposition products are known.

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**SECTION 11: Toxicological information****11.1 Information on toxicological effects**

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

**Acute toxicity**

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

**Product:**

Acute oral toxicity	: Acute toxicity estimate: 69,28 mg/kg Method: Calculation method
Acute inhalation toxicity	: Acute toxicity estimate: 2,57 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	: Acute toxicity estimate: 377,55 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, female): 68 mg/kg
Acute dermal toxicity	: LD50 (Rat, females): 1.250 mg/kg

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

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Acute oral toxicity	: LD50 (Rat, female): 3.350 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	: LC50 (Rat): > 18,18 mg/l Exposure time: 6 h Test atmosphere: vapour
Acute dermal toxicity	: LD50 (Rabbit, female): 2.460 mg/kg Method: OECD Test Guideline 402

**(S)- $\alpha$ -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

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

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**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)- $\alpha$ -Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:**

Species	: Rabbit
Result	: Skin irritation

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

Assessment	: Repeated exposure may cause skin dryness or cracking.
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**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:**

Result	: No eye irritation
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**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)- $\alpha$ -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:**

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

### 2-Methyl-1-propanol:

Test Type	: Buehler Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative
Remarks	: Based on data from similar materials

### (S)- $\alpha$ -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 spermatogonia Species: Mouse Application Route: Intraperitoneal injection



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

### Ethion:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
	Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro) Result: negative
	Test Type: In vitro sister chromatid exchange assay in mammalian cells Result: negative
	Test Type: in vitro micronucleus test Result: positive
Genotoxicity in vivo	: Test Type: Chromosomal aberration Species: Rat Result: negative
	Test Type: In vivo micronucleus test Species: Mouse Result: positive
Germ cell mutagenicity- Assessment	: Weight of evidence does not support classification as a germ cell mutagen.

### Chlorpyrifos:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative
	Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro) Result: negative
	Test Type: Chromosome aberration test in vitro Result: positive
Genotoxicity in vivo	: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Ingestion Method: OECD Test Guideline 474

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|| Result: negative

## 2-Methyl-1-propanol:

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: in vitro micronucleus 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)- $\alpha$ -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

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**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**

II 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

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Exposure time	: 24 Months
Result	: negative

## Chlorpyrifos:

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

## (S)- $\alpha$ -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 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

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### Chlorpyrifos:

- |                                    |   |   |
|------------------------------------|---|---|
| Effects on fertility               | : | Test Type: Two-generation reproduction toxicity study<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative |
| Effects on foetal development      | : | Test Type: Embryo-foetal development<br>Species: Rat<br>Application Route: Ingestion<br>Result: positive                  |
| Reproductive toxicity - Assessment | : | 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<br>Species: Rat<br>Application Route: inhalation (vapour)<br>Method: OPPTS 870.3800<br>Result: negative |
| Effects on foetal development | : | Test Type: Embryo-foetal development<br>Species: Rat<br>Application Route: inhalation (vapour)<br>Method: OECD Test Guideline 414<br>Result: negative         |

### (S)- $\alpha$ -Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:

- |                               |   |   |
|-------------------------------|---|---|
| Effects on fertility          | : | Test Type: Three-generation reproduction toxicity study<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative                 |
| Effects on foetal development | : | Test Type: Embryo-foetal development<br>Species: Rat<br>Application Route: Ingestion<br>Method: OECD Test Guideline 414<br>Result: negative |

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

- |                               |   |  |
|-------------------------------|---|--|
| Effects on fertility          | : | Test Type: Three-generation reproduction toxicity study<br>Species: Rat<br>Application Route: inhalation (vapour)<br>Result: negative<br>Remarks: Based on data from similar materials |
| Effects on foetal development | : | Test Type: Embryo-foetal development<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative   |

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|| 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 : Nervous system  
|| Assessment : Causes damage to organs.

### 2-Methyl-1-propanol:

|| Assessment : May cause respiratory irritation., May cause drowsiness or dizziness.

### (S)- $\alpha$ -Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:

|| Assessment : May cause respiratory irritation.  
|| Remarks : Based on national or regional 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.

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**Components:****Ethion:**

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

**(S)- $\alpha$ -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
NOAEL	: 0,1 mg/kg
LOAEL	: 1 mg/kg
Application Route	: Ingestion
Exposure time	: 13 Weeks

Species	: Rat
NOAEL	: > 0,000296 mg/l
Application Route	: inhalation (vapour)
Exposure time	: 13 Weeks

Species	: Rat
NOAEL	: > 5 mg/kg
Application Route	: Skin contact
Exposure time	: 21 Days

**Ethion / Chlorpyrifos / Alpha-Cypermethrin  
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**2-Methyl-1-propanol:**

Species	: Rat
NOAEL	: > 1.450 mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days
Method	: OECD Test Guideline 408

Species	: Rat
NOAEL	: >= 7,5 mg/l
Application Route	: inhalation (vapour)
Exposure time	: 17 Weeks

**(S)- $\alpha$ -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.



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**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

**SECTION 12: Ecological information****12.1 Toxicity****Components:****Solvent naphtha (petroleum), light aromatic:**

|| Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 8,2 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction

|| Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 4,5 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 202

|| Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (microalgae)): 3,1 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201

NOELR (Pseudokirchneriella subcapitata (microalgae)): 0,5 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201

|| 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

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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 : > 0,1 - 1 µg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 : > 0,01 - 0,1 µg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Scenedesmus subspicatus): 0,48 mg/l  
Exposure time: 96 h

M-Factor (Acute aquatic toxicity) : 10.000

Toxicity to fish (Chronic toxicity) : NOEC: 0,3 µg/l  
Exposure time: 35 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0046 µg/l  
Exposure time: 21 d  
Species: Mysidopsis bahia (opossum shrimp)

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 microorganisms : EC50 : > 1.000 mg/l  
Exposure time: 16 h

Toxicity to daphnia and other : NOEC: 20 mg/l

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aquatic invertebrates (Chronic toxicity)	Exposure time: 21 d Species: Daphnia magna (Water flea)
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## (S)- $\alpha$ -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 $\mu$ g/l Exposure time: 34 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0,03 $\mu$ g/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 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

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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 Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,48 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0,24 mg/l Exposure time: 72 h Method: OECD Test Guideline 201  NOEC (Pseudokirchneriella subcapitata (green algae)): 0,24 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 : > 10.000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,053 mg/l Exposure time: 30 d Species: Oryzias latipes (Japanese medaka) Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,316 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	1

## 12.2 Persistence and degradability

### Components:

#### Solvent naphtha (petroleum), light aromatic:

Biodegradability	:	Result: Inherently biodegradable. Biodegradation: 94 % Exposure time: 25 d
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#### Ethion:

Biodegradability	:	Result: not rapidly degradable
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**Chlorpyrifos:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 22 % Exposure time: 28 d Method: OECD Test Guideline 301D
Stability in water	:	Degradation half life (DT50): > 2 Months

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

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 74 % Exposure time: 28 d Method: OECD Test Guideline 301D
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**(S)- $\alpha$ -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
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**Hydrocarbons, C10, aromatics, <1% naphthalene:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 49,56 % Exposure time: 28 d Method: OECD Test Guideline 301F
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**2,6-Di-tert-butyl-p-cresol:**

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 4,5 % Exposure time: 28 d Method: OECD Test Guideline 301C
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**12.3 Bioaccumulative potential****Components:****Ethion:**

Partition coefficient: n-octanol/water	:	log Pow: 5,07
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**Chlorpyrifos:**

Bioaccumulation	:	Species: Danio rerio (zebra fish) Bioconcentration factor (BCF): 6.918 Method: OECD Test Guideline 305
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Partition coefficient: n-octanol/water	:	log Pow: 5,21 Method: OECD Test Guideline 107
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**2-Methyl-1-propanol:**

Partition coefficient: n-octanol/water : log Pow: 1  
Method: OECD Test Guideline 117

**(S)- $\alpha$ -Cyano-3-phenoxybenzyl (1R, 3R)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate:**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): 910

Partition coefficient: n-octanol/water : log Pow: 6,94

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

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 330 - 1.800

Partition coefficient: n-octanol/water : log Pow: 5,1

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment****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 Other adverse effects****Product:**

Endocrine disrupting potential : 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.

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**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.  
Do not dispose of waste into sewer.

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.

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Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.

**SECTION 14: Transport information****14.1 UN number**

ADN	:	UN 1992
ADR	:	UN 1992
RID	:	UN 1992
IMDG	:	UN 1992
IATA	:	UN 1992

**14.2 UN proper shipping name**

ADN	:	FLAMMABLE LIQUID, TOXIC, N.O.S.
II		(2-Methyl-1-propanol, Ethion)
ADR	:	FLAMMABLE LIQUID, TOXIC, N.O.S.
II		(2-Methyl-1-propanol, Ethion)
RID	:	FLAMMABLE LIQUID, TOXIC, N.O.S.
II		(2-Methyl-1-propanol, Ethion)
IMDG	:	FLAMMABLE LIQUID, TOXIC, N.O.S.
II		(2-Methyl-1-propanol, Ethion, Chlorpyrifos)
IATA	:	Flammable liquid, toxic, n.o.s.
II		(2-Methyl-1-propanol, Ethion)

**14.3 Transport hazard class(es)**

	Class	Subsidiary risks
ADN	: 3	6.1
ADR	: 3	6.1
RID	: 3	6.1
IMDG	: 3	6.1
IATA	: 3	6.1

**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

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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

**14.6 Special precautions for user**

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

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

Remarks : Not applicable for product as supplied.

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**



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

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

**15.2 Chemical safety assessment**

A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

Other information	:	Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.
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**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.
H360D	:	May damage the unborn child.
H370	:	Causes damage to organs.
H372	:	Causes damage to organs through prolonged or repeated exposure.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.

**Full text of other abbreviations**

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Carc.	:	Carcinogenicity
Eye Dam.	:	Serious eye damage
Flam. Liq.	:	Flammable liquids
Muta.	:	Germ cell mutagenicity
Repr.	:	Reproductive toxicity
Skin Irrit.	:	Skin irritation

# Ethion / Chlorpyrifos / Alpha-Cypermethrin

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STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure
ZA OEL	:	South Africa. The Regulations for Hazardous Chemical Agents, Occupational Exposure Limits
ZA OEL / OEL-RL	:	Occupational Exposure Limit Restricted limit - 8- hour exposure or equivalent (12 hour shifts)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - 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; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; 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

### Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

### Classification of the mixture:

Flam. Liq. 3	H226
Acute Tox. 3	H301
Acute Tox. 4	H332
Acute Tox. 3	H311
Skin Irrit. 2	H315

### Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Calculation method
Calculation method

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Eye Dam. 1	H318	Calculation method
Muta. 1B	H340	Calculation method
Carc. 1B	H350	Calculation method
Repr. 1B	H360D	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

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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.

ZA / EN