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Product name: Effect Microtech CS PRO

Creation date: 26.5.2020 · Revision: 7.5.2021 · Version: 1

# SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name

## **Effect Microtech CS PRO**

1.2. Relevant identified uses of the substance or mixture and uses advised against

#### Relevant identified uses

Insecticide.

#### Uses advised against

Use only for the purposes specified in this safety data sheet or on the product label. Any other use is prohibited.

1.3. Details of the supplier of the safety data sheet

#### Supplier

UNICHEM D.O.O.

Address: Sinja Gorica 2, 1360 Vrhnika, Slovenia

Phone: +386 1 755 81 50 Fax: +386 1 755 81 55 www.unichem.si

E-mail: unichem@unichem.si

1.4. Emergency telephone number

112

+386 1 755 81 50

## **SECTION 2. HAZARDS IDENTIFICATION**

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Skin Sens. 1; H317 May cause an allergic skin reaction.

Aquatic Acute 1; H400 Very toxic to aquatic life.

Aquatic Chronic 1; H410 Very toxic to aquatic life with long lasting effects.

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#### 2.2 Label elements

## 2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]





#### Signal word: Warning

H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

EUH066 Repeated exposure may cause skin dryness or cracking.

P102 Keep out of reach of children.

P262 Do not get in eyes, on skin, or on clothing.

P273 Avoid release to the environment.

P280 Wear protective gloves/eye protection/face protection.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents/container in accordance with national regulation.

#### 2.2.2. Contains:

permethrin (ISO) (CAS: 52645-53-1, EC: 258-067-9, Index: 613-058-00-2) formaldehyde (CAS: 50-00-0, EC: 200-001-8, Index: 605-001-00-5)

#### 2.2.3. Special provisions

Special hazards are not known or expected.

#### 2.3. Other hazards

No information.

## **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

## 3.1. Substances

For mixtures see 3.2.

#### 3.2. Mixtures

Name	CAS EC Index	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Conc. Limits	REACH Registration No.
piperonyl butoxide	51-03-6 200-076-7 -	8	Aquatic Acute 1; H400 Aquatic Chronic 1; H410		01-2119537431-46
permethrin (ISO)	52645-53-1 258-067-9 613-058-00-2	8	Acute Tox. 4; H302 Skin Sens. 1; H317 Acute Tox. 4; H332 Aquatic Acute 1; H400 [M=1.000] Aquatic Chronic 1; H410 [M=1.000]		-
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	- 918-481-9 -	5-<10	Asp. Tox. 1; H304 EUH066		-

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Name	CAS % Classification according to Index Regulation (EC) No 1272/2008 (CLP)		according to Regulation (EC)	Specific Conc. Limits	REACH Registration No.
prallethrin (ISO)	23031-36-9 245-387-9 607-431-00-9	1	Acute Tox. 4; H302 Acute Tox. 3; H331 Aquatic Acute 1; H400 [M=10] Aquatic Chronic 1; H410 [M=10]		-
ammonia <sup>[B]</sup>	1336-21-6 215-647-6 007-001-01-2	0,1-<1	Skin Corr. 1B; H314 Aquatic Acute 1; H400	STOT SE 3; H335: C ≥ 5 %	01-2119488876-14
methanol	67-56-1 200-659-6 603-001-00-X	<0,1	Flam. Liq. 2; H225 Acute Tox. 3; H301 Acute Tox. 3; H311 Acute Tox. 3; H331 STOT SE 1; H370	STOT SE 1; H370: C≥10 % STOT SE 2; H371: 3 % ≤ C < 10 %	01-2119433307-44
formaldehyde <sup>[B, D]</sup>	50-00-0 200-001-8 605-001-00-5	<0,1	Acute Tox. 3; H301 Acute Tox. 3; H311 Skin Corr. 1B; H314 Skin Sens. 1; H317 Acute Tox. 3; H331 Muta. 2; H341 Carc. 1B; H350	Skin Corr. 1B; H314: $C \ge 25 \%$ Skin Irrit. 2; H315: $5 \% \le C < 25 \%$ Skin Sens. 1; H317: $C \ge 0,2 \%$ Eye Irrit. 2; H319: $5 \% \le C < 25 \%$ STOT SE 3; H335: $C \ge 5 \%$	01-2119488953-20
toluene	108-88-3 203-625-9 601-021-00-3	<0,01	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Repr. 2; H361d STOT RE 2; H373		-
n-hexane	110-54-3 203-777-6 601-037-00-0	<0,01	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Repr. 2; H361f STOT RE 2; H373 Aquatic Chronic 2; H411	STOT RE 2; H373: C ≥ 5 %	-
benzene	71-43-2 200-753-7 601-020-00-8	<0,001	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Muta. 1B; H340 Carc. 1A; H350 STOT RE 1; H372		-

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#### Notes for substances:

B Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.

In Part 3 entries with Note B have a general designation of the following type: "nitric acid ... %".

In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

D Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Part 3.

However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the supplier must state on the label the name of the substance followed by the words "non-stabilised".

#### **SECTION 4. FIRST AID MEASURES**

## 4.1. Description of first aid measures

#### General notes

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

#### Following inhalation

Remove patient to fresh air - move out of dangerous area. If symptoms develop and persist, seek medical attention. If breathing is irregular or respiratory arrest occurs provide artificial respiration. Seek medical help immediately.

#### Following skin contact

Immediately remove contaminated clothing. Wash affected skin areas thoroughly with plenty of water and soap. If symptoms develop and persist, seek medical attention.

#### Following eye contact

Immediately flush eyes with plenty of water while keeping eyelids apart (at least 15 minutes). After initial flushing, remove any contact lenses and continue flushing. If irritation persists, seek professional medical attention.

#### Following ingestion

Do not induce vomiting! Rinse mouth thoroughly with water. Consult a physician. Show the physician the safety data sheet or

4.2. Most important symptoms and effects, both acute and delayed

#### **Inhalation**

Excessive exposure to spray mist, fog, or vapours may cause respiratory irritation.

## Skin contact

May cause sensitisation by skin contact (symptoms: itching, redness, rashes).

Repeated exposure may cause dry skin or cracked skin.

Contact with skin may cause irritation (redness, itching).

#### Eye contact

Contact with eyes can cause irritation (redness, tearing, pain).

#### **Ingestion**

May cause abdominal discomfort.

May cause nausea/vomiting and diarrhea.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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## **SECTION 5. FIREFIGHTING MEASURES**

#### 5.1. Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

Full water jet.

#### 5.2. Special hazards arising from the substance or mixture

#### Hazardous combustion products

In case of a fire toxic gases can be generated; do not inhale gases/smoke. In the event of fire the following can be generated: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>).

#### 5.3. Advice for firefighters

## Protective actions

In case of fire or heating do not breathe fumes/vapours. Cool containers at risk with water spray. If possible remove containers from endangered area. No action shall be taken involving any personal risk or without suitable training.

#### Special protective equipment for firefighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

#### Additional information

Contaminated firefighting water must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

#### 6.1. Personal precautions, protective equipment and emergency procedures

## 6.1.1. For non-emergency personnel

#### Protective equipment

Use personal protective equipment (Section 8).

## **Emergency procedures**

Ensure adequate ventilation. Prevent access to unauthorised personnel. Prevent access to unprotected personnel. Do not breathe vapour or mist. Avoid contact with skin and eyes. No action shall be taken involving any personal risk or without suitable training.

## 6.1.2. For emergency responders

During intervention, use personal protective equipment (Section 8).

## 6.2. Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. If accidental large entry into water or ground occurs, inform responsible authorities.

#### 6.3. Methods and material for containment and cleaning up

#### 6.3.1. For containment

Stem the spill if this does not pose risks.

## 6.3.2. For cleaning up

Absorb product (with inert material), collect it in special container and dispose it to a licensed hazardous-waste disposal contractor. Dispose in accordance with applicable regulations (see Section 13).

#### 6.3.3. Other information

See Section 7: safe handling.

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#### 6.4. Reference to other sections

See also Sections 8 and 13.

## **SECTION 7. HANDLING AND STORAGE**

#### 7.1. Precautions for safe handling

## 7.1.1. Protective measures

#### Measures to prevent fire

Ensure adequate ventilation.

#### Measures to prevent aerosol and dust generation

Use general or local exhaust ventilation to prevent inhaling vapours and aerosols.

#### Measures to protect the environment

Avoid release to the environment.

#### 7.1.2. Advice on general occupational hygiene

Use good personal hygiene practices – wash hands at breaks and when done working with material. Refer to instructions on label and regulations for safety and health at work. Ensure adequate ventilation. Do not eat, drink or smoke while working. Avoid contact with skin and eyes. Do not breathe vapours/mist. Consider measures required in Section 8 of this safety data sheet. Remove contaminated clothes and wash them before reuse.

#### 7.2. Conditions for safe storage, including any incompatibilities

## 7.2.1. Technical measures and storage conditions

Store in accordance with local regulations. Keep in tightly closed container. Keep in a dry place. Keep in cool and well ventilated area. Keep away from food, drink and animal feeding stuffs. Protect from direct sunlight. Keep out of the reach of children.

#### 7.2.2. Packaging materials

The original container of producer.

#### 7.2.3. Requirements for storage rooms and vessels

Close opened containers after use. Put the containers upright to prevent from leaking. Do not store in unlabelled containers.

#### 7.2.4. Storage class

Store in accordance with local regulations.

## 7.2.5. Further information on storage conditions

-

#### 7.3. Specific end use(s)

#### Recommendations

Insecticide. Use only as directed.

#### Industrial sector specific solutions

No specific data available.

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### 8.1. Control parameters

## 8.1.1. Occupational exposure limit values

Name (CAS)	Limit values		Short-term e	Short-term exposure limit		Biological Tolerance Values
	ml/m <sup>3</sup> (ppm)	mg/m <sup>3</sup>	ml/m <sup>3</sup> (ppm)	mg/m <sup>3</sup>		
Methanol (67-56-1)	200	266	250	333	Sk	
Formaldehyde (50-00-0)	2	2,5	2	2,5	Carc	
Ammonia (1336-21-6)	25	18	35	25		
Toluene (108-88-3)	50	191	100	384	Sk	
Sodium hydroxide (1310-73-2)				2		
n-Hexane (110-54-3)	20	72				
Benzene (71-43-2)	1	3,25			Carc, Sk	
Cycloalkanes ≥C7 (-)		800				

## 8.1.2. Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 482:2012+A1:2015 Workplace exposure. General requirements for the performance of procedures for the measurement of chemical agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values.

## 8.1.3. DNEL/DMEL values

#### For components

Name	Туре	Exposure route	Exposure frequency	Value	Remark
piperonyl butoxide (51-03-6)	Worker	inhalation	long term (systemic effects)	3,875 mg/m <sup>3</sup>	
piperonyl butoxide (51-03-6)	Worker	inhalation	short term (systemic effects)	7,75 mg/m <sup>3</sup>	
piperonyl butoxide (51-03-6)	Worker	inhalation	long term (local effects)	3,875 mg/m <sup>3</sup>	
piperonyl butoxide (51-03-6)	Worker	inhalation	short term (local effects)	3,875 mg/m <sup>3</sup>	
piperonyl butoxide (51-03-6)	Worker	dermal	long term (systemic effects)	27,7 mg/kg bw/day	
piperonyl butoxide (51-03-6)	Worker	dermal	short term (systemic effects)	55,5 mg/kg bw/day	
piperonyl butoxide (51-03-6)	Worker	dermal	long term (local effects)	0,44 mg/cm <sup>2</sup>	
piperonyl butoxide (51-03-6)	Worker	dermal	short term (local effects)	0,888 mg/cm <sup>2</sup>	
piperonyl butoxide (51-03-6)	Consumer	inhalation	long term (systemic effects)	1,94 mg/m <sup>3</sup>	
piperonyl butoxide (51-03-6)	Consumer	inhalation	short term (systemic effects)	3,875 mg/m <sup>3</sup>	
piperonyl butoxide (51-03-6)	Consumer	inhalation	long term (local effects)	1,94 mg/m <sup>3</sup>	
piperonyl butoxide (51-03-6)	Consumer	inhalation	short term (local effects)	1,94 mg/m <sup>3</sup>	
piperonyl butoxide (51-03-6)	Consumer	dermal	long term (systemic effects)	13,9 mg/kg bw/day	
piperonyl butoxide (51-03-6)	Consumer	dermal	short term (systemic effects)	27,8 mg/kg bw/day	
piperonyl butoxide (51-03-6)	Consumer	dermal	long term (local effects)	0,22 mg/m <sup>3</sup>	
piperonyl butoxide (51-03-6)	Consumer	dermal	short term (local effects)	0,22 mg/cm <sup>2</sup>	
piperonyl butoxide (51-03-6)	Consumer	oral	long term (systemic effects)	1,14 mg/kg bw/day	
piperonyl butoxide (51-03-6)	Consumer	oral	short term (systemic effects)	2,3 mg/kg bw/day	
ammonia (1336-21-6)	Worker	inhalation	long term (systemic effects)	47,6 mg/m <sup>3</sup>	
ammonia (1336-21-6)	Worker	inhalation	short term (systemic effects)	47,6 mg/m <sup>3</sup>	
ammonia (1336-21-6)	Worker	inhalation	long term (local effects)	14 mg/m <sup>3</sup>	
ammonia (1336-21-6)	Worker	inhalation	short term (local effects)	36 mg/m <sup>3</sup>	

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ammonia (1336-21-6)	Worker	dermal	long term (systemic effects)	6,8 mg/kg bw/day
ammonia (1336-21-6)	Worker	dermal	short term (systemic effects)	6,8 mg/kg bw/day
ammonia (1336-21-6)	Consumer	inhalation	long term (systemic effects)	23,8 mg/m <sup>3</sup>
ammonia (1336-21-6)	Consumer	inhalation	short term (systemic effects)	23,8 mg/m <sup>3</sup>
ammonia (1336-21-6)	Consumer	inhalation	long term (local effects)	2,8 mg/m <sup>3</sup>
ammonia (1336-21-6)	Consumer	inhalation	short term (local effects)	7,2 mg/m <sup>3</sup>
ammonia (1336-21-6)	Consumer	dermal	long term (systemic effects)	68 mg/kg bw/day
ammonia (1336-21-6)	Consumer	dermal	short term (systemic effects)	68 mg/kg bw/day
ammonia (1336-21-6)	Consumer	oral	long term (systemic effects)	6,8 mg/kg bw/day
ammonia (1336-21-6)	Consumer	oral	short term (systemic effects)	6,8 mg/kg bw/day
methanol (67-56-1)	Worker	inhalation	long term (systemic effects)	130 mg/m <sup>3</sup>
methanol (67-56-1)	Worker	inhalation	short term (systemic effects)	130 mg/m <sup>3</sup>
methanol (67-56-1)	Worker	inhalation	long term (local effects)	130 mg/m <sup>3</sup>
methanol (67-56-1)	Worker	inhalation	short term (local effects)	130 mg/m <sup>3</sup>
methanol (67-56-1)	Worker	dermal	long term (systemic effects)	20 mg/kg bw/day
methanol (67-56-1)	Worker	dermal	short term (systemic effects)	20 mg/kg bw/day
methanol (67-56-1)	Consumer	inhalation	long term (systemic effects)	26 mg/m <sup>3</sup>
methanol (67-56-1)	Consumer	inhalation	short term (systemic effects)	26 mg/m <sup>3</sup>
methanol (67-56-1)	Consumer	inhalation	long term (local effects)	26 mg/m <sup>3</sup>
methanol (67-56-1)	Consumer	inhalation	short term (local effects)	26 mg/m <sup>3</sup>
methanol (67-56-1)	Consumer	dermal	long term (systemic effects)	4 mg/kg bw/day
methanol (67-56-1)	Consumer	dermal	short term (systemic effects)	4 mg/kg bw/day
methanol (67-56-1)	Consumer	oral	long term (systemic effects)	4 mg/kg bw/day
methanol (67-56-1)	Consumer	oral	short term (systemic effects)	4 mg/kg bw/day
ormaldehyde (50-00-0)	Worker	inhalation	long term (systemic effects)	9 mg/m <sup>3</sup>
ormaldehyde (50-00-0)	Worker	inhalation	long term (local effects)	0,375 mg/m <sup>3</sup>
formaldehyde (50-00-0)	Worker	inhalation	short term (local effects)	0,75 mg/m <sup>3</sup>
formaldehyde (50-00-0)	Worker	dermal	long term (systemic effects)	240 mg/kg bw/day
ormaldehyde (50-00-0)	Worker	dermal	long term (local effects)	37 μg/cm <sup>2</sup>
formaldehyde (50-00-0)	Consumer	inhalation	long term (systemic effects)	3,2 mg/m <sup>3</sup>
ormaldehyde (50-00-0)	Consumer	inhalation	long term (local effects)	0,1 mg/m <sup>3</sup>
formaldehyde (50-00-0)	Consumer	dermal	long term (systemic effects)	102 mg/kg bw/day
formaldehyde (50-00-0)	Consumer	dermal	long term (local effects)	12 μg/cm <sup>2</sup>
formaldehyde (50-00-0)	Consumer	oral	long term (systemic effects)	4,1 mg/kg bw/day

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#### 8.1.4. PNEC values

#### For components

Name	<b>Exposure route</b>	Value	Remark
piperonyl butoxide (51-03-6)	fresh water	0,001 mg/L	
piperonyl butoxide (51-03-6)	marine water	0 mg/L	
piperonyl butoxide (51-03-6)	water treatment plant	0,2 mg/L	
piperonyl butoxide (51-03-6)	fresh water sediment	0,18 mg/kg	dry weight
piperonyl butoxide (51-03-6)	marine water sediment	0,18 mg/kg	dry weight
piperonyl butoxide (51-03-6)	soil	0,032 mg/kg	dry weight
permethrin (ISO) (52645-53-1)	fresh water	0,00047 μg/l	
permethrin (ISO) (52645-53-1)	water treatment plant	0,00495 mg/L	
permethrin (ISO) (52645-53-1)	fresh water sediment	0,001 mg/kg	
permethrin (ISO) (52645-53-1)	soil	0,0876 mg/kg	
permethrin (ISO) (52645-53-1)	food chain	16,7 mg/kg	oral
ammonia (1336-21-6)	fresh water	0,001 mg/L	
ammonia (1336-21-6)	water, intermittent release	0,007 mg/L	fresh water
ammonia (1336-21-6)	marine water	0,001 mg/L	
methanol (67-56-1)	fresh water	20,8 mg/L	
methanol (67-56-1)	water, intermittent release	1540 mg/L	fresh water
methanol (67-56-1)	marine water	2,08 mg/L	
methanol (67-56-1)	water treatment plant	100 mg/L	
methanol (67-56-1)	fresh water sediment	77 mg/kg	dry weight
methanol (67-56-1)	marine water sediment	7,7 mg/kg	dry weight
methanol (67-56-1)	soil	100 mg/kg	dry weight
formaldehyde (50-00-0)	fresh water	0,44 mg/L	
formaldehyde (50-00-0)	water, intermittent release	4,44 mg/L	fresh water
formaldehyde (50-00-0)	marine water	0,44 mg/L	
formaldehyde (50-00-0)	water treatment plant	0,19 mg/L	
formaldehyde (50-00-0)	fresh water sediment	2,3 mg/kg	dry weight
formaldehyde (50-00-0)	marine water sediment	2,3 mg/kg	dry weight
formaldehyde (50-00-0)	soil	0,2 mg/kg	dry weight

## 8.2. Exposure controls

## 8.2.1. Appropriate engineering control

#### Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices – wash hands at breaks and when done working with material. Handle in accordance with good industrial hygiene and safety practice. Observe normal precautions that apply for handling with chemicals. Do not breathe vapours/aerosols. Avoid contact with eyes and skin.

## Organisational measures to prevent exposure

Do not eat, drink or smoke while working.

#### Technical measures to prevent exposure

Keep away from food, drink and animal feeding stuffs. Provide good ventilation and local exhaust in areas with increased concentration.

## 8.2.2. Personal protective equipment

#### Eye and face protection

Safety googles (EN 166).

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#### Hand protection

Protective gloves (EN 374). Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately.

#### Appropriate materials

Material	Thickness	Penetration Time	Remark
Nitrile	> 0,4 mm	> 30 min	
Butyl rubber	> 0,7 mm	> 480 min	

#### Skin protection

Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345). Protective work clothing resistant to liquid chemicals (EN 14605).

#### Respiratory protection

Not needed under normal use and adequate ventilation. At elevated concentrations of vapours/aerosols in the air wear a mask (EN 140) with filter A2-P2 (EN 14387). 'High/elevated concentrations' means that the occupational exposure limit values have been exceeded.

#### Thermal hazards

None under normal use conditions.

#### 8.2.3. Environmental exposure controls

#### Technical measures to prevent exposure

Do not allow product to reach drains, sewage systems or ground water.

## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

## 9.1. Information on basic physical and chemical properties

-	Physical state:	liquid
-	Colour:	white
-	Odour:	characteristic

## Important health, safety and environmental information

pH	No information.
Melting point/freezing point	No information.
Initial boiling point/boiling range	No information.
Flash point	No information.
Evaporation rate	No information.
Flammability (solid, gas)	No information.
Explosion limits (vol%)	No information.
Vapour pressure	No information.
Vapour density	No information.
Density	<b>Density</b> : 0,9 - 1,05 g/cm <sup>3</sup>
Solubility	Water: Soluble
Partition coefficient	No information.
Auto-ignition temperature	No information.
Decomposition temperature	No information.
Viscosity	No information.
Explosive properties	No information.
Oxidising properties	No information.
	Melting point/freezing point Initial boiling point/boiling range Flash point Evaporation rate Flammability (solid, gas) Explosion limits (vol%) Vapour pressure Vapour density Density  Solubility  Partition coefficient Auto-ignition temperature Decomposition temperature Viscosity Explosive properties

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9.2. Other information

- Remarks:

## **SECTION 10. STABILITY AND REACTIVITY**

10.1. Reactivity

No data available.

10.2. Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3. Possibility of hazardous reactions

The product is stable under recommended storage and handling conditions.

10.4. Conditions to avoid

Do not expose to heat and direct sunlight.

10.5. Incompatible materials

Not known.

10.6. Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released.

## **SECTION 11. TOXICOLOGICAL INFORMATION**

- 11.1. Information on toxicological effects
  - (a) Acute toxicity

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Name	Exposure route	Туре	Species	Time	Value	Method	Remark
piperonyl butoxide (51-03-6)	oral	LD <sub>50</sub>	rat		4570 mg/kg	OECD 401	
piperonyl butoxide (51-03-6)	dermal	LD <sub>50</sub>	rabbit		> 2000 mg/kg	OECD 402	
piperonyl butoxide (51-03-6)	inhalation	LC <sub>50</sub>	rat	4 h	> 5,9 mg/l	OECD 403	
permethrin (ISO) (52645-53-1)	oral	LD <sub>50</sub>	rat		554 mg/kg bw	OECD 401	
permethrin (ISO) (52645-53-1)	dermal	LD <sub>50</sub>	rat		> 2000 mg/kg	OECD 402	
permethrin (ISO) (52645-53-1)	inhalation (aerosol)	LC <sub>50</sub>	rat	4 h	> 4,638 mg/l	OECD 403	
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics (-)	oral	LD <sub>50</sub>	rat		5000 mg/kg		
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics (-)	dermal	LD <sub>50</sub>	rabbit		3160 mg/kg		
prallethrin (ISO) (23031-36-9)	oral	LD <sub>50</sub>	rat		460 mg/kg		
prallethrin (ISO) (23031-36-9)	dermal	LD <sub>50</sub>	rat		> 2000 mg/kg		
prallethrin (ISO) (23031-36-9)	inhalation	LC <sub>50</sub>	rat		> 0,465 mg/l		
methanol (67-56-1)	oral	LD <sub>50</sub>	rat		5628 mg/kg		
methanol (67-56-1)	dermal	LD <sub>50</sub>	rabbit		15800 mg/kg		
methanol (67-56-1)	inhalation	LC <sub>50</sub>	rat	4 h	64000 ppm		
formaldehyde (50-00-0)	Inhalation (gases)	LC <sub>50</sub>	rat	4 h	0,58 mg/l		
formaldehyde (50-00-0)	dermal	LD <sub>50</sub>	rabbit		270 mg/kg		
formaldehyde (50-00-0)	oral	LD <sub>50</sub>	rat		> 200 mg/kg		

## (b) Skin corrosion/irritation

Name	Species	Time	Result	Method	Remark
permethrin (ISO) (52645-53-1)	rabbit		Non-irritant.	OECD 404	
ammonia (1336-21-6)	rabbit		Corrosive.	OECD 404	

## (c) Serious eye damage/irritation

Name	Species	Time	Result	Method	Remark
permethrin (ISO) (52645-53-1)	rabbit		No irritant effect.	OECD 405	
ammonia (1336-21-6)	rabbit		It causes serious eye damage.		

## (d) Respiratory or skin sensitisation

Name	Exposure route	Species	Time	Result	Method	Remark				
ammonia (1336-21-6)	-	guinea pig		Non sensitising.						
Additional information: May cause an allergic skin reaction.										

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## (e) (Germ cell) mutagenicity

Name	Туре	Species	Time	Result	Method	Remark
permethrin (ISO) (52645-53-1)	in-vitro mutagenicity			Negative.	OECD 473	
permethrin (ISO) (52645-53-1)	in-vivo mutagenicity			Not mutagenic.	OECD 475	
ammonia (1336-21-6)	in-vitro mutagenicity			Negative.	OECD 471	
ammonia (1336-21-6)	in-vivo mutagenicity	mouse		Negative.	OECD 474	

## (f) Carcinogenicity

Name	Exposure route	Туре	Species	Time	Value	Result	Method	Remark
permethrin (ISO) (52645-53-1)	oral	NOAEL	rat		75 mg/kg bw/day	No effect	OECD 453	

## (g) Reproductive toxicity

Name	Reproductive toxicity type	Туре	Species	Time	Value	Result	Method	Remark
permethrin (ISO) (52645-53- 1)	Developmental toxicity	NOAEL	rabbit		500 mg/kg bw/day	No effect	OECD 414	
permethrin (ISO) (52645-53- 1)	Effects on fertility	NOAEL	rat		500 mg/kg bw/day	No effect	OECD 416	
permethrin (ISO) (52645-53- 1)	Maternal toxicity	NOAEL	rabbit		250 mg/kg bw/day	No effect	OECD 414	
ammonia (1336-21-6)	Effects on fertility	NOAEL	rat		408 mg/kg bw/day	Negative.	OECD 422	oral

Summary of evaluation of the CMR properties

No information.

(h) STOT-single exposure

No information.

(i) STOT-repeated exposure

Name	Exposure route	Туре	Species	Time	Organ	Value	Result	Method	Remark
permethrin (ISO) (52645- 53-1)	oral	NOAEL	rat	90 days		8,6 mg/kg bw/day	No effect.	OECD 408	
permethrin (ISO) (52645- 53-1)	dermal	NOAEL	rat	13 weeks		1000 mg/kg bw/day		OECD 411	6 h per day, 5 days per week
permethrin (ISO) (52645- 53-1)	inhalation (aerosol)	NOAEL	rat	13 weeks		0,2201 mg/L	No effect.	OECD 413	6 h per day, 5 days per week
ammonia (1336-21-6)	inhalation	NOAEL	rat (male)	50 days		0,035 mg/L			
Additional information:	Repeated exposi	ure may o	cause skir	drynes	or crac	king.			

## (j) Aspiration hazard

No information.

## **SECTION 12. ECOLOGICAL INFORMATION**

12.1. Toxicity

12.1.1. Acute (short-term) toxicity

For components

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Substance (CAS Nr.)	Туре	Value	Exposure time	Species	Organism	Method	Remark
piperonyl butoxide (51-03-6)	LC <sub>50</sub>	3,94 mg/L	96 h	fish	Cyprinodon variegatus	OECD 203	
	EC <sub>50</sub>	0,51 mg/L	48 h	crustacea	Daphnia magna	OECD 202	
	EC <sub>50</sub>	3,89 mg/L	72 h	algae	Selenastrum capricornutum	OECD 201	
permethrin (ISO) (52645-53-1)	LC <sub>50</sub>	8,9 μg/l	96 h	fish	Poecilia reticulata	OECD 203	
	LC <sub>50</sub>	0,145 mg/L	96 h	fish	Cyprinus carpio	OECD 203	
	EC <sub>50</sub>	0,00127 mg/L	48 h	crustacea	Daphnia magna	OECD 202	
	EC <sub>50</sub>	> 1,13 mg/L	72 h	algae	Pseudokirchneriella subcapitata	OECD 201	
	NOEC	> 0,0131 mg/L	72 h	algae	Pseudokirchneriella subcapitata	OECD 201	
	EC <sub>10</sub>	0,0023 mg/L	72 h	algae	Pseudokirchneriella subcapitata		
	EC <sub>50</sub>	> 1000 mg/L	3 h	microorganisms	Activated sludge	OECD 209	
	NOEC	0,00495 mg/L	3 h	microorganisms		OECD 209	
	LD <sub>50</sub>	0,163 μg/l		bee	Apis mellifera		
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics (-)	LC <sub>50</sub>	10 – 100 mg/L		bacteria			
prallethrin (ISO) (23031-36-9)	LC <sub>50</sub>	0,0176 mg/L	96 h	fish	Brachydanio rerio		
	EC <sub>50</sub>	0,019 mg/L	48 h	crustacea	Daphnia magna		
	EC <sub>50</sub>	4,9 mg/L	72 h	algae	Scenedesmus subspicatus		
ammonia (1336-21-6)	LC <sub>50</sub>	0,89 mg/L	96 h	fish	Oncorhynchus mykiss		
	LC <sub>50</sub>	101 mg/L	48 h	crustacea	Daphnia magna	ASTM E729- 80	
	EC <sub>50</sub>	2700 mg/L	18 days	algae	Chlorella vulgaris		
methanol (67-56-1)	LC <sub>50</sub>	15400 mg/L	96 h	fish	Lepomis macrochirus		
	EC <sub>50</sub>	> 10000 mg/L	48 h	crustacea	Daphnia magna		
	IC <sub>5</sub>	8000 mg/L	8 days	algae	Scenedesmus quadricauda		
formaldehyde (50-00-0)	LC <sub>50</sub>	41 mg/L	96 h	fish	Brachydanio rerio		
	EC <sub>50</sub>	42 mg/L	24 h	crustacea	Daphnia magna	DIN 38412- 11	
	EC <sub>50</sub>	3,48 – 4,89 mg/L	72 h	algae			

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## 12.1.2. Chronic (long-term) toxicity

## For components

Substance (CAS Nr.)	Туре	Value	Exposure time	Species	Organism	Method	Remark
piperonyl butoxide (51-	NOEC	0,053 mg/l		fish	Cyprinodon variegatus	OECD 210	
03-6)	NOEC	0,03 mg/l	21 days	crustacea	Daphnia magna		
	NOEC	0,824 mg/l		algae	Selenastrum capricornutum	OECD 201	
permethrin (ISO) (52645- 53-1)	NOEC	0,00041 mg/l	35 days	fish	Danio rerio	OECD 210	
	NOEC	0,0047 μg/L	21 days	crustacea	Daphnia magna	OECD 211	
	EC50	126 mg/kg	14 days	Soil macro- organisms	Lampito mauritii		
prallethrin (ISO) (23031- 36-9)	NOEC	2,6 mg/l		algae	Scenedesmus subspicatus		
ammonia (1336-21-6)	LOEC	0,022 mg/l	73 days	fish	Oncorhynchus mykiss		
	NOEC	0,79 mg/l	96 h	crustacea	Daphnia magna	EPA OPPTS 850.1300	

## 12.2. Persistence and degradability

## 12.2.1. Abiotic degradation, physical- and photo-chemical elimination

## For components

Substance (CAS Nr.)	Environment	Type / Method	Half Time	Evaluation	Method	Remark
permethrin (ISO) (52645- 53-1)	Air	photodegradation	0,701 days		half-life	Concentration of OH radicals: 500,000 / cm3
permethrin (ISO) (52645- 53-1)	water		> 365 days		half-life	pH < 7
permethrin (ISO) (52645- 53-1)	water		> 365 days		half-life	pH 7
permethrin (ISO) (52645- 53-1)	water		35 – 42 days		half-life	pH > 7
permethrin (ISO) (52645- 53-1)	Soil		11 – 21,2 days		half-life	

## 12.2.2. Biodegradation

## For components

Substance (CAS Nr.)	Туре	Rate	Time	Evaluation	Method	Remark
piperonyl butoxide (51-03-6)	-			Not rapidly biodegradable.		
permethrin (ISO) (52645-53-1)	Biodegradation in water	5 %	28 days		OECD 301 B	
ammonia (1336-21-6)	-			readily biodegradable		
methanol (67-56-1)	-			readily biodegradable		
formaldehyde (50-00-0)	-			readily biodegradable	OECD 301 D	

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## 12.3. Bioaccumulative potential

## 12.3.1. Partition coefficient

#### For components

Substance (CAS Nr.)	Media	Value	Temperature	рН	Concentration	Method
piperonyl butoxide (51-03-6)	Octanol-water (log Pow)	4,8		6,5		OECD 117
permethrin (ISO) (52645-53-1)	Octanol-water (log Pow)	4,67	25 °C			
prallethrin (ISO) (23031-36-9)	Octanol-water (log Pow)	> 2,78				
ammonia (1336-21-6)	Octanol-water (log Pow)	-0,64				
methanol (67-56-1)	Octanol-water (log Pow)	-0,77				
formaldehyde (50-00-0)	Octanol-water (log Pow)	0,35	25 °C			

## 12.3.2. Bioconcentration factor (BCF)

## For components

Substance (CAS Nr.)	species	Organism	Value	Duration	Evaluation	Method	Remark
piperonyl butoxide (51-03-6)	BCF		91 – 380			OECD 305 E	
permethrin (ISO) (52645-53-1)	BCF	Cyprinodon variegatus	290 – 620				
permethrin (ISO) (52645-53-1)	BCF	fish	< 2000				
prallethrin (ISO) (23031-36-9)	BCF		46				

#### 12.4. Mobility in soil

## 12.4.1. Known or predicted distribution to environmental compartments

No information.

## 12.4.2. Surface tension

No information.

## 12.4.3. Adsorption/Desorption

#### For components

Substance (CAS Nr.)	Туре	Criterion	Value	Evaluation	Method	Remark
permethrin (ISO) (52645-53-1)	Soil	Henry constant (H)	0,0046 - 0,045 Pa.m <sup>3</sup> / mol			
prallethrin (ISO) (23031-36-9)	Soil	log KOC	3,12			

#### 12.5. Results of PBT and vPvB assessment

No evaluation.

## 12.6. Other adverse effects

No information.

## 12.7. Additional information

## For product

Very toxic to aquatic life with long lasting effects.

Do not allow to reach ground water, water courses or sewage system.

## **SECTION 13. DISPOSAL CONSIDERATIONS**

#### 13.1. Waste treatment methods

## 13.1.1. Product / Packaging disposal

## Waste chemical

Do not allow product to reach drains/sewage systems. Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste.

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#### **Packaging**

Dispose of in accordance with applicable waste disposal regulation. Deliver completely emptied containers to approved waste disposal authorities.

13.1.2. Waste treatment-relevant information

Disposal in accordance with the Rules on the management of waste.

13.1.3. Sewage disposal-relevant information

Do not discharge into drains.

13.1.4. Other disposal recommendations

-

## **SECTION 14. TRANSPORT INFORMATION**

14.1. UN number

UN 3082

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (permethrin (ISO))

14.3. Transport hazard class(es)

9

14.4. Packing group

Ш

14.5. Environmental hazards

Additional labeling: ENVIRONMENTALLY HAZARDOUS

IMDG: MARINE POLLUTANT

14.6. Special precautions for user

Limited quantities

5 L

**Tunnel restriction code** 

(-)

**IMDG EmS** 

F-A, S-F

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

Goods may not be carried in bulk in bulk containers, containers or vehicles.

## **SECTION 15. REGULATORY INFORMATION**

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2015/830)
  - Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
  - 15.1.1. Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Not applicable.





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#### 15.1.2. Special instructions

-

Observe the regulations on employment and protection against dangerous substances for young people, pregnant women and nursing mothers.

#### 15.2. Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

#### **SECTION 16. OTHER INFORMATION**

## Indication of changes

-

## Abbreviations and acronyms

ATE - Acute Toxicity Estimate

ADR - Agreement concerning the International Carriage of Dangerous Goods by Road

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

CEN - European Committee for Standardisation

C&L - Classification and Labelling

CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

CAS# - Chemical Abstracts Service number

CMR - Carcinogen, Mutagen, or Reproductive Toxicant

CSA - Chemical Safety Assessment

CSR - Chemical Safety Report

DMEL - Derived Minimal Effect Level

DNEL - Derived No Effect Level

DPD - Dangerous Preparations Directive 1999/45/EC

DSD - Dangerous Substances Directive 67/548/EEC

DU - Downstream User

EC - European Community

ECHA - European Chemicals Agency

EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)

EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)

EEC - European Economic Community

EINECS - European Inventory of Existing Commercial Substances

ELINCS - European List of notified Chemical Substances

EN - European Standard

EQS - Environmental Quality Standard

EU - European Union

Euphrac - European Phrase Catalogue

EWC - European Waste Catalogue (replaced by LoW - see below)

GES - Generic Exposure Scenario

GHS - Globally Harmonized System

IATA - International Air Transport Association

ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air

IMDG - International Maritime Dangerous Goods

IMSBC - International Maritime Solid Bulk Cargoes

IT - Information Technology

IUCLID - International Uniform Chemical Information Database

IUPAC - International Union for Pure Applied Chemistry

JRC - Joint Research Centre

Kow - octanol-water partition coefficient

 $LC_{50}$  - Lethal Concentration to 50 % of a test population

LD<sub>50</sub> - Lethal Dose to 50% of a test population (Median Lethal Dose)

LE - Legal Entity

LoW - List of Wastes (see http://ec.europa.eu/environment/waste/framework/list.htm)

LR - Lead Registrant

M/I - Manufacturer / Importer

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MS - Member States

MSDS - Material Safety Data Sheet

OC - Operational Conditions

OECD - Organization for Economic Co-operation and Development

OEL - Occupational Exposure Limit

OJ - Official Journal

OR - Only Representative

OSHA - European Agency for Safety and Health at work

PBT - Persistent, Bioaccumulative and Toxic substance

PEC - Predicted Effect Concentration

PNEC(s) - Predicted No Effect Concentration(s)

PPE - Personal Protection Equipment

(Q)SAR - Qualitative Structure Activity Relationship

REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

RID - Regulations concerning the International Carriage of Dangerous Goods by Rail

RIP - REACH Implementation Project

RMM - Risk Management Measure

SCBA - Self-Contained Breathing Apparatus

SDS - Safety data sheet

SIEF - Substance Information Exchange Forum

SME - Small and Medium sized Enterprises

STOT - Specific Target Organ Toxicity

(STOT) RE - Repeated Exposure

(STOT) SE - Single Exposure

SVHC - Substances of Very High Concern

**UN - United Nations** 

vPvB - Very Persistent and Very Bioaccumulative

## Key literature references and sources for data

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## List of relevant H phrases

H225 Highly flammable liquid and vapour.

H301 Toxic if swallowed.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H332 Harmful if inhaled.

H336 May cause drowsiness or dizziness.

H340 May cause genetic defects.

H341 Suspected of causing genetic defects .

H350 May cause cancer.

H361d Suspected of damaging the unborn child.

H361f Suspected of damaging fertility.

H370 Causes damage to organs.

H372 Causes damage to organs through prolonged or repeated exposure .

H373 May cause damage to organs through prolonged or repeated exposure .

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H411 Toxic to aquatic life with long lasting effects.

EUH066 Repeated exposure may cause skin dryness or cracking.

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☑ Provided correct labelling of the product

✓ Compliance with the local legislation

☑ Provided correct classification of the product

☑ Provided adequate transport data

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