

## TOPAS

Version 19.2      Revision Date: 12.05.2021      SDS Number: S1190672      This version replaces all previous versions.

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

#### 1.1 Product identifier

Trade name : TOPAS  
Design code : A6209G  
Product Registration Number : MAPP 16765

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

Use of the Substance/Mixture : Fungicide  
Recommended restrictions on use : professional use

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

Company : Syngenta UK Limited  
CPC4, Capital Park  
Fulbourn, Cambridge CB21 5XE  
United Kingdom  
Telephone : +44 (0) 1223 883400  
Telefax : +44 (0) 1223 882195  
E-mail address of person responsible for the SDS : customer.services@syngenta.com

#### 1.4 Emergency telephone number

Emergency telephone number : +44 1484 538444

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2	H319: Causes serious eye irritation.
Reproductive toxicity, Category 2	H361d: Suspected of damaging the unborn child.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.


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### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

- Hazard pictograms : 
- Signal word : Warning
- Hazard statements : H319 Causes serious eye irritation.  
H361d Suspected of damaging the unborn child.  
H411 Toxic to aquatic life with long lasting effects.
- Supplemental Hazard Statements : EUH401 To avoid risks to human health and the environment, comply with the instructions for use.
- Precautionary statements : P102 Keep out of reach of children.  
P201 Obtain special instructions before use.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.
- Prevention:**  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Response:**  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P391 Collect spillage.
- Disposal:**  
P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.

#### Hazardous components which must be listed on the label:

penconazole (ISO)

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

##### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
penconazole (ISO)	66246-88-6 266-275-6 613-317-00-X	Acute Tox. 4; H302 Repr. 2; H361d Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 10 - < 20
cyclohexanone	108-94-1 203-631-1 606-010-00-7 01-2119453616-35	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318	>= 10 - < 20
calcium dodecylbenzene sulphonate	26264-06-2 247-557-8 01-2119560592-37	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 3 - < 10
2-methylpropan-1-ol	78-83-1 201-148-0 603-108-00-1 01-2119484609-23	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H336 (Central nervous system) STOT SE 3; H335 (Respiratory system)	>= 3 - < 10
Substances with a workplace exposure limit :			
(2-methoxymethylethoxy)propanol	34590-94-8 252-104-2 01-2119450011-60		>= 50 - < 70

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.

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- If inhaled : Move the victim to fresh air.  
If breathing is irregular or stopped, administer artificial respiration.  
Keep patient warm and at rest.  
Call a physician or poison control centre immediately.
- In case of skin contact : Take off all contaminated clothing immediately.  
Wash off immediately with plenty of water.  
If skin irritation persists, call a physician.  
Wash contaminated clothing before re-use.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Remove contact lenses.  
Immediate medical attention is required.
- If swallowed : If swallowed, seek medical advice immediately and show this container or label.  
Do NOT induce vomiting.

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

- Symptoms : Nonspecific  
No symptoms known or expected.

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

- Treatment : There is no specific antidote available.  
Treat symptomatically.
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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media : Extinguishing media - small fires  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  
Extinguishing media - large fires  
Alcohol-resistant foam
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

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

- Specific hazards during firefighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).  
Exposure to decomposition products may be a hazard to health.  
Flash back possible over considerable distance.

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### 5.3 Advice for firefighters

- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.
- Further information : Do not allow run-off from fire fighting to enter drains or water courses.  
Cool closed containers exposed to fire with water spray.
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## SECTION 6: Accidental release measures

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

- Personal precautions : Refer to protective measures listed in sections 7 and 8.  
Keep people away from and upwind of spill/leak.  
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.  
Remove all sources of ignition.  
Pay attention to flashback.

### 6.2 Environmental precautions

- Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Do not flush into surface water or sanitary sewer system.  
If the product contaminates rivers and lakes or drains inform respective authorities.

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

- Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Clean contaminated surface thoroughly.  
Clean with detergents. Avoid solvents.  
Retain and dispose of contaminated wash water.

### 6.4 Reference to other sections

For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- Advice on safe handling : Avoid contact with skin and eyes.  
When using do not eat, drink or smoke.  
Use only in an area containing flame proof equipment.  
Take precautionary measures against static discharges.  
For personal protection see section 8.

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

- Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from combustible material. Keep in an area equipped with sprinklers. Keep away from food, drink and animal

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feedingstuffs. No smoking.

Further information on storage stability : Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

### 7.3 Specific end use(s)

Specific use(s) : For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
(2-methoxymethylethoxy)propanol	34590-94-8	TWA	50 ppm 308 mg/m <sup>3</sup>	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		TWA	50 ppm 308 mg/m <sup>3</sup>	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
cyclohexanone	108-94-1	TWA	10 ppm 40.8 mg/m <sup>3</sup>	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	20 ppm 81.6 mg/m <sup>3</sup>	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		TWA	10 ppm 41 mg/m <sup>3</sup>	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL	20 ppm 82 mg/m <sup>3</sup>	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
penconazole (ISO)	66246-88-6	TWA	2 mg/m <sup>3</sup>	Syngenta
2-methylpropan-1-ol	78-83-1	TWA	50 ppm 154 mg/m <sup>3</sup>	GB EH40
		STEL	75 ppm 231 mg/m <sup>3</sup>	GB EH40

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### Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
cyclohexanone	108-94-1	cyclohexanol: 2 Millimoles per mole Creatinine (Urine)	After shift	GB EH40 BAT

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

Substance name	End Use	Exposure routes	Potential health effects	Value	
(2-methoxymethylethoxy)propanol	Workers	Dermal	Long-term systemic effects	82.5 mg/kg	
	Workers	Inhalation	Long-term systemic effects	263 mg/m <sup>3</sup>	
	Consumers	Dermal	Long-term systemic effects	36 mg/kg	
	Consumers	Inhalation	Long-term systemic effects	38 mg/m <sup>3</sup>	
	Consumers	Oral	Long-term systemic effects	11 mg/kg	
	cyclohexanone	Workers	Inhalation	Long-term systemic effects	40 mg/m <sup>3</sup>
		Workers	Inhalation	Acute systemic effects	80 mg/m <sup>3</sup>
		Workers	Inhalation	Long-term local effects	40 mg/m <sup>3</sup>
		Workers	Inhalation	Acute local effects	80 mg/m <sup>3</sup>
		Workers	Dermal	Long-term systemic effects	4 mg/kg
		Workers	Dermal	Acute systemic effects	4 mg/kg
		Consumers	Inhalation	Long-term systemic effects	10 mg/m <sup>3</sup>
Consumers		Inhalation	Acute systemic effects	20 mg/m <sup>3</sup>	
Consumers		Inhalation	Long-term local effects	20 mg/m <sup>3</sup>	
Consumers		Inhalation	Acute local effects	40 mg/m <sup>3</sup>	
Consumers		Dermal	Long-term systemic effects	1 mg/kg	
Consumers		Dermal	Acute systemic effects	1 mg/kg	
Consumers	Oral	Long-term systemic effects	1.5 mg/kg		
Consumers	Oral	Acute systemic effects	1.5 mg/kg		
calcium dodecylbenzene sulphonate	Workers	Inhalation	Long-term systemic effects	52 mg/m <sup>3</sup>	
	Workers	Inhalation	Acute systemic effects	52 mg/m <sup>3</sup>	
	Workers	Inhalation	Long-term local	52 mg/m <sup>3</sup>	

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			effects	
	Workers	Inhalation	Acute local effects	52 mg/m3
	Workers	Dermal	Long-term systemic effects	57.2 mg/kg
	Workers	Dermal	Acute systemic effects	80 mg/kg
	Workers	Dermal	Long-term local effects	1.57 mg/cm2
	Workers	Dermal	Acute local effects	1.57 mg/cm2
2-methylpropan-1-ol	Workers	Inhalation	Long-term systemic effects, Long-term local effects	310 mg/m3
	Consumers	Inhalation	Long-term systemic effects, Long-term local effects	55 mg/m3
	Consumers	Oral	Long-term systemic effects, Long-term local effects	25 mg/kg

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

Substance name	Environmental Compartment	Value
(2-methoxymethylethoxy)propanol	Fresh water	0.1 mg/l
	Marine water	0.01 mg/l
	Intermittent use/release	1 mg/l
	Sewage treatment plant	4 mg/l
	Fresh water sediment	0.386 mg/kg
	Marine sediment	0.0386 mg/kg
cyclohexanone	Soil	0.0185 mg/kg
	Fresh water	0.033 mg/l
	Freshwater - intermittent	0.329 mg/l
	Marine water	0.003 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	0.249 mg/kg
calcium dodecylbenzene sulphonate	Marine sediment	0.025 mg/kg
	Soil	0.03 mg/kg
	Fresh water	0.28 mg/l
	Marine water	0.458 mg/l
	Freshwater - intermittent	0.654 mg/l
	Sewage treatment plant	50 mg/l
2-methylpropan-1-ol	Fresh water sediment	27.5 mg/kg
	Marine sediment	2.75 mg/kg
	Fresh water	0.4 mg/l
	Sewage treatment plant	10 mg/l
	Soil	0.0699 mg/kg
	Marine sediment	0.152 mg/kg
	Fresh water sediment	1.52 mg/kg
	Marine water	0.04 mg/l



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### 8.2 Exposure controls

#### Engineering measures

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.  
Where necessary, seek additional occupational hygiene advice.

#### Personal protective equipment

Eye protection : Tightly fitting safety goggles  
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.  
Equipment should conform to EN 166

Hand protection

Material : Nitrile rubber  
Break through time : > 480 min  
Glove thickness : 0.5 mm

Remarks : Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.  
The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Remove and wash contaminated clothing before re-use.

Wear as appropriate:

Impervious clothing

Respiratory protection : No personal respiratory protective equipment normally required.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.  
When selecting personal protective equipment, seek appropriate professional advice.

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### SECTION 9: Physical and chemical properties

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

Physical state	:	liquid
Colour	:	light yellow to brownish
Odour	:	characteristic
Odour Threshold	:	No data available
Melting point/range	:	No data available
Boiling point/boiling range	:	> 143 °C
Flammability	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	62.5 °C Method: Pensky-Martens closed cup
Auto-ignition temperature	:	210 °C
Decomposition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	4 - 8 Concentration: 1 % w/v
Viscosity	:	No data available
Viscosity, dynamic	:	7.53 mPa.s (20 °C) 4.37 mPa.s (40 °C)
Viscosity, kinematic	:	No data available
Solubility(ies)	:	No data available
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	No data available
Density	:	0.985 g/cm <sup>3</sup> (20 °C)

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Relative vapour density : No data available

Particle characteristics  
Particle size : No data available

### 9.2 Other information

Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Evaporation rate : No data available

Miscibility with water : Miscible

Surface tension : 30.3 mN/m, 25 °C

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

None reasonably foreseeable.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

### 10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

### 10.5 Incompatible materials

Materials to avoid : None known.

### 10.6 Hazardous decomposition products

Hazardous decomposition products : No hazardous decomposition products are known.

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## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

#### Acute toxicity

##### Product:

Acute oral toxicity : LD50 (Rat, female): 2,574 mg/kg

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Acute inhalation toxicity : LC50 (Rat, male and female): > 5,294 mg/m<sup>3</sup>  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 4,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

### **Components:**

#### **penconazole (ISO):**

Acute oral toxicity : LD50 (Rabbit, male and female): 971 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 4,046 mg/m<sup>3</sup>  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat, male and female): > 3,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

#### **cyclohexanone:**

Acute oral toxicity : LD50 (Rat): 1,534 mg/kg

Acute inhalation toxicity : LC50 (Rat): 11 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): 1,100 mg/kg

#### **2-methylpropan-1-ol:**

Acute oral toxicity : LD50 (Rat): 2,830 - 3,350 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 24.6 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 - 2,460 mg/kg

### **Skin corrosion/irritation**

#### **Product:**

Species : Rabbit  
Result : No skin irritation

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### Components:

#### **penconazole (ISO):**

Species : Rabbit  
Result : No skin irritation

#### **cyclohexanone:**

Species : Rabbit  
Result : Irritating to skin.

#### **calcium dodecylbenzene sulphonate:**

Result : Irritating to skin.

#### **2-methylpropan-1-ol:**

Result : Irritating to skin.

### **Serious eye damage/eye irritation**

#### Product:

Species : Rabbit  
Result : Irritation to eyes, reversing within 7 days

### Components:

#### **penconazole (ISO):**

Species : Rabbit  
Result : No eye irritation

#### **cyclohexanone:**

Species : Rabbit  
Result : Risk of serious damage to eyes.

#### **calcium dodecylbenzene sulphonate:**

Result : Risk of serious damage to eyes.

#### **2-methylpropan-1-ol:**

Result : Risk of serious damage to eyes.

### **Respiratory or skin sensitisation**

#### Product:

Test Type : Buehler Test  
Species : Guinea pig  
Result : Did not cause sensitisation on laboratory animals.

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### Components:

#### **penconazole (ISO):**

Species : Guinea pig  
Result : Did not cause sensitisation on laboratory animals.

#### **2-methylpropan-1-ol:**

Species : Guinea pig  
Result : Did not cause sensitisation on laboratory animals.  
Remarks : Information given is based on data obtained from similar substances.

### **Germ cell mutagenicity**

#### Components:

#### **penconazole (ISO):**

Germ cell mutagenicity-  
Assessment : Animal testing did not show any mutagenic effects.

#### **(2-methoxymethylethoxy)propanol:**

Germ cell mutagenicity-  
Assessment : In vitro tests did not show mutagenic effects

### **Carcinogenicity**

#### Components:

#### **penconazole (ISO):**

Carcinogenicity -  
Assessment : No evidence of carcinogenicity in animal studies.

### **Reproductive toxicity**

#### Components:

#### **penconazole (ISO):**

Reproductive toxicity -  
Assessment : Ingestion of excessive amounts by pregnant animals resulted in maternal and foetal toxicity., These concentrations exceed relevant human dose levels.

#### **(2-methoxymethylethoxy)propanol:**

Reproductive toxicity -  
Assessment : Animal testing did not show any effects on foetal development.

### **STOT - single exposure**

#### Components:

#### **2-methylpropan-1-ol:**

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation., The substance or mixture is classified as specific

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target organ toxicant, single exposure, category 3 with narcotic effects.

### Repeated dose toxicity

#### Components:

#### **penconazole (ISO):**

Remarks : No adverse effect has been observed in chronic toxicity tests.

### 11.2 Information on other hazards

#### Endocrine disrupting properties

#### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 6.8 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 36 mg/l  
aquatic invertebrates Exposure time: 48 h

Toxicity to algae/aquatic : ErC50 (Desmodesmus subspicatus (green algae)): 7.9 mg/l  
plants Exposure time: 72 h

#### Components:

#### **penconazole (ISO):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.3 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 6.75 mg/l  
aquatic invertebrates Exposure time: 48 h

Toxicity to algae/aquatic : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 4.7  
plants mg/l  
Exposure time: 96 h

NOEC (Raphidocelis subcapitata (freshwater green alga)): 0.55 mg/l  
End point: Growth rate

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Exposure time: 96 h

EC50 (Lemna gibba (gibbous duckweed)): 0.22 mg/l  
Exposure time: 14 d

NOEC (Lemna gibba (gibbous duckweed)): 0.1 mg/l  
Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l  
Exposure time: 3 h

Toxicity to fish (Chronic toxicity) : NOEC: 0.36 mg/l  
Exposure time: 35 d  
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.069 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 1

### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

### calcium dodecylbenzene sulphonate:

#### Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

### 2-methylpropan-1-ol:

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 : EC50 (Raphidocelis subcapitata (freshwater green alga)): 1,799 mg/l  
Exposure time: 72 h

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



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### 12.2 Persistence and degradability

**Components:**

**penconazole (ISO):**

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: > 706 d  
Remarks: Persistent in water.

**cyclohexanone:**

Biodegradability : Result: Readily biodegradable.

**2-methylpropan-1-ol:**

Biodegradability : Result: Readily biodegradable.

### 12.3 Bioaccumulative potential

**Components:**

**penconazole (ISO):**

Bioaccumulation : Remarks: Does not bioaccumulate.

### 12.4 Mobility in soil

**Components:**

**penconazole (ISO):**

Distribution among environmental compartments : Remarks: Very highly mobile in soil.

Stability in soil : Dissipation time: 138 h  
Percentage dissipation: 50 % (DT50)  
Remarks: Product is not persistent.

### 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..

**Components:**

**penconazole (ISO):**

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

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### **cyclohexanone:**

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

### **2-methylpropan-1-ol:**

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

## 12.6 Endocrine disrupting properties

### **Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7 Other adverse effects

### **Components:**

#### **penconazole (ISO):**

Additional ecological information : Not applicable

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

- Product : Do not contaminate ponds, waterways or ditches with chemical or used container.  
Do not dispose of waste into sewer.  
Where possible recycling is preferred to disposal or incineration.  
If recycling is not practicable, dispose of in compliance with local regulations.
- Contaminated packaging : Empty remaining contents.  
Triple rinse containers.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not re-use empty containers.
- Waste Code : uncleaned packagings  
15 01 10, packaging containing residues of or contaminated by hazardous substances

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### SECTION 14: Transport information

#### 14.1 UN number or ID number

**ADN** : UN 3082  
**ADR** : UN 3082  
**RID** : UN 3082  
**IMDG** : UN 3082  
**IATA** : UN 3082

#### 14.2 UN proper shipping name

**ADN** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PENCONAZOLE)  
**ADR** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PENCONAZOLE)  
**RID** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PENCONAZOLE)  
**IMDG** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PENCONAZOLE)  
**IATA** : Environmentally hazardous substance, liquid, n.o.s. (PENCONAZOLE)

#### 14.3 Transport hazard class(es)

**ADN** : 9  
**ADR** : 9  
**RID** : 9  
**IMDG** : 9  
**IATA** : 9

#### 14.4 Packing group

**ADN**  
Packing group : III  
Classification Code : M6  
Hazard Identification Number : 90  
Labels : 9  
**ADR**  
Packing group : III  
Classification Code : M6  
Hazard Identification Number : 90  
Labels : 9  
Tunnel restriction code : (-)

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### RID

Packing group : III  
Classification Code : M6  
Hazard Identification Number : 90  
Labels : 9

### IMDG

Packing group : III  
Labels : 9  
EmS Code : F-A, S-F

### IATA (Cargo)

Packing instruction (cargo aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

### IATA (Passenger)

Packing instruction (passenger aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

## 14.5 Environmental hazards

### ADN

Environmentally hazardous : yes

### ADR

Environmentally hazardous : yes

### RID

Environmentally hazardous : yes

### IMDG

Marine pollutant : yes

### IATA (Passenger)

Environmentally hazardous : yes

### IATA (Cargo)

Environmentally hazardous : 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 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

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## SECTION 15: Regulatory information

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

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according to Regulation (EC) No. 1907/2006



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REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3 cyclohexanone
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	:	
E2	ENVIRONMENTAL HAZARDS	Quantity 1 200 t      Quantity 2 500 t

### Other regulations:

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.  
Use plant protection products safely. Always read the label and product information before use.  
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

### 15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

## SECTION 16: Other information

### Full text of H-Statements

H226	:	Flammable liquid and vapour.
H302	:	Harmful if swallowed.
H312	:	Harmful in contact with skin.
H315	:	Causes skin irritation.
H318	:	Causes serious eye damage.
H332	:	Harmful if inhaled.
H335	:	May cause respiratory irritation.
H336	:	May cause drowsiness or dizziness.
H361d	:	Suspected of damaging the unborn child.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

### Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard

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Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Flam. Liq.	: Flammable liquids
Repr.	: Reproductive toxicity
Skin Irrit.	: Skin irritation
STOT SE	: Specific target organ toxicity - single exposure
2000/39/EC	: Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 BAT	: UK. Biological monitoring guidance values
2000/39/EC / TWA	: Limit Value - eight hours
2000/39/EC / STEL	: Short term exposure limit
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	: Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

### Further information

#### Classification of the mixture:

Eye Irrit. 2      H319  
Repr. 2      H361d

#### Classification procedure:

Based on product data or assessment  
Calculation method

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Aquatic Chronic 2

H411

Calculation method

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