



Topas®

syngenta.

GROUP 3 FUNGICIDE



Contains 100 g/l penconazole as an emulsifiable concentrate.

For the control of powdery mildew in apples, crab apples, pears, blackcurrants, redcurrants, grapes, outdoor and protected strawberries.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

Syngenta UK Limited
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Tel: Cambridge (01223) 883400

In case of toxic or transport emergency ring +44 (0)1484 538444 any time

PROTECT FROM FROST
STORE IN A COOL, DRY PLACE

This product label is compliant with the CPA Voluntary Initiative (VI) guidance



1 Litre

Product names marked ® or ™, the ALLIANCE FRAME the SYNGENTA Logo and the PURPOSE ICON are Trademarks of a Syngenta Group Company

TOPAS®

TOPAS is an emulsifiable concentrate containing 100 g/l penconazole.

Signal Word

Warning

Hazard

Causes serious eye damage.

Statements

Suspected of damaging the unborn child.
Toxic to aquatic life with long lasting effects.

Precautions

Keep out of reach of children.

Statements

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

If exposed or concerned: Get medical advice attention.

If eye irritation persists: Get medical advice attention.

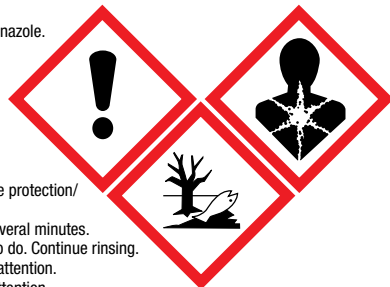
Collect spillage.

Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Supplemental Information

To avoid risks to human health and the environment comply with the instructions for use.

MAPP: 16765 UFI: P10R-03TX-1000-93HU



IMPORTANT INFORMATION

FOR USE ONLY AS A FUNGICIDE

For use on:

Crops: Apples, crab apples, pears, blackcurrants, redcurrants, grapes, outdoor and protected strawberries.

Maximum individual dose, Maximum number of treatments, Latest time of application and Other specific restrictions: Full details are given in the Statutory Area on attached leaflet.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

SAFETY PRECAUTIONS

(a) Operator protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following protective equipment:

WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

However engineering controls may replace personal protective equipment if COSHH assessment shows that they provide an equal or higher standard of protection.

WASH ALL PROTECTIVE CLOTHING thoroughly after use especially inside of gloves.

WASH CONCENTRATE from skin or eyes immediately.

WASH HANDS AND EXPOSED SKIN before meals and after work.

(b) Environmental protection

RISK TO NON-TARGET INSECTS OR OTHER ARTHROPODS. See Directions for Use.

Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area.
Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

(c) Storage and disposal

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place. RINSE CONTAINER THOROUGHLY, by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.

IMPORTANT INFORMATION

FOR USE ONLY AS A FUNGICIDE

For use on:

Crops	Maximum Individual Dose (litres product/ha)	Maximum Number of Treatments	Latest time of application (days before harvest)
Apple, pear, crab apple	0.5	3 per year	21
Blackcurrant (outdoor), redcurrant (outdoor)	0.5	2 per year	28
Strawberry (outdoor)	0.5	2 per crop	3
Strawberry (protected)	0.5	4 per crop	3
Table grapes, wine grapes	0.3	3 per year	28

Other specific restrictions:

For the use on grapes, apples, pears and crab apples the spray concentration must not exceed 0.5 L product in 250 L water.

For use on currants the spray concentration must not exceed 0.5 L product in 2000 L water.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

This leaflet is part of the approved Product Label.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be carefully read in order to obtain safe and successful use of this product.

Where application is by horizontal boom sprayers: Avoid spraying/application within 5 m of the field boundary to reduce effects on non-target insects or other arthropods.

Where application is by broadcast sprayers: The best available application technique, which minimises off-target drift should be used to reduce effects on non-target insects or other arthropods.

No information on the safety of TOPAS in Integrated Pest Management systems has been provided and therefore safety cannot be assumed.

PROPERTIES OF TOPAS

TOPAS should be used preventatively or in the earliest stages of disease development to minimize risks of resistance. To maintain a high level of protection, applications of TOPAS should not be made consecutively but used in alternation with fungicides with different modes of action. Where high infection levels of mildew are present in the crop, use another product to lower the mildew pressure before using TOPAS.

DISEASES CONTROLLED

TOPAS is for the control of powdery mildew in apples, crab apples, pears, outdoor blackcurrants and redcurrants, table and wine grapes, outdoor and protected strawberries.

A programme of different powdery mildew fungicides is required for season long control.

Pome fruit

Podosphaera leucotricha

Grapes

Uncinula necator

Currants

(*Podosphaera mors-uvae*)

Strawberry

Sphaerotheca macularis

Integrated Pest Control

For the latest information consult your specialist advisor. Where insect pests are a problem, a specific insecticide should be used.

CROP SPECIFIC INFORMATION

APPLE, PEAR, CRAB APPLES

Crop safety on pears has not been tested. Test on a small area prior to large scale application.

TOPAS will reduce the spread of powdery mildew from primary infections and will also control the spread of secondary mildew

RATE OF USE

A rate of 0.5 litres/ha should be used for trees of 3 – 3.5m height at full canopy density. Apply in 250 -1500 l/ha of water to ensure good crop cover.

Where tree height and/or canopy density is reduced, the dose (and water volume) should be adjusted in accordance with an appropriate dose adjustment scheme. Consult Syngenta or your specialist advisor for further information. Further information on the PACE scheme is available from HDC, or see the HDC leaflet (Orchard Spraying: Opportunities to reduce rates) available on the CRD website at http://www.pesticides.gov.uk/uploadedfiles/HDC_TreeFruitDosingleaflet.pdf

Always spray to achieve a thorough and even coverage of the foliage as this will maximise the protectant properties of the product.

Where trees are significantly taller than 3.5m height, the efficacy is likely to be reduced.

TIMING

TOPAS should be applied as a foliar spray from BBCH 71 (fruit size up to 10 mm; fruit fall after flowering). Further applications can be made if disease pressure remains high. A programme of sprays should include not more than 3 sprays of TOPAS in any one season. Allow a minimum of 10 days between applications.

The latest time of application is 21 days before harvest.

PROCESSING

Where the crop is destined for processing, consult your processor before treating with TOPAS.

OUTDOOR AND PROTECTED STRAWBERRY

RATE OF USE

Apply TOPAS at a rate of 0.5 litres product per hectare.

It is important to ensure complete coverage of the plant at all growth stages.

TIMING

For optimum results apply TOPAS preventatively or in the earliest stages of disease development but no earlier than the stated growth stage.

Outdoor strawberries

Apply TOPAS from the beginning of stolon/runner formation, visible about 2 cm long (BBCH 41). Further applications can be made if disease pressure remains high. Up to 2 applications may be made in any one season. Allow a minimum of 10 days between applications.

Protected strawberries

Apply TOPAS preventatively from the 3rd leaf unfolded stage (BBCH 13). Further applications can be made if disease pressure remains high. Up to 4 applications may be made in any one season. Allow a minimum of 10 days between applications.

The latest time of application for outdoor and protected strawberries is 3 days before harvest.

VOLUME

Apply in 300-2000 litres of water per hectare.

PROCESSING

Where the crop is destined for processing, consult your processor before treating with TOPAS.

BLACKCURRANTS AND REDCURRANTS

TIMING

TOPAS should be used as a protective spray commencing at the first sign of disease (usually mid-late flowering) and continue at 7 day intervals. A further application can be made after harvest to protect plants further. A maximum of 2 applications should be made in any one cropping year.

The latest time of application is 28 days before harvest

RATE OF USE

TOPAS should be used at the rate of 0.5 litres per hectare.

It is important to ensure complete coverage of the plant at all growth stages.

VOLUME

Apply TOPAS in a minimum water volume of 2000 l/ha to achieve good coverage of the foliage without excessive run off.

PROCESSING

Where the crop is destined for processing, consult your processor before treating with TOPAS.

TABLE AND WINE GRAPES

RATE OF USE

Apply TOPAS at a rate of 0.3 litres product per hectare.

It is important to ensure complete coverage of the plant at all growth stages.

TIMING

Apply TOPAS from the 3rd leaf unfolded stage (BBCH 13). Further applications can be made if disease pressure remains high. Up to 3 applications may be made per crop. Allow a minimum of 8 day between applications.

The latest time of application is 28 days before harvest

VOLUME

Apply in at 200-1000 litres of water per hectare.

PROCESSING

Where the crop is destined for processing, consult your processor before treating with TOPAS.

MIXING AND SPRAYING

For outdoor use apply through conventional crop spraying equipment. Apply using a medium quality spray as defined by BCPC. A spray pressure of at least 2 bar is preferred.

Applications for the protected uses should be made via hydraulic nozzle applicator e.g. motorised sprayer with hand lance or boom lance or knapsack applications.

Make sure the sprayer is set to give an even application at the correct volume.

Fill the spray tank with half the required volume of water and begin agitation. Add the required amount of TOPAS and continue agitation while adding the rest of the water. Agitate the mixture thoroughly before use and continue agitation during spraying. Thoroughly wash all spraying and measuring equipment with water and a wetting agent immediately after use. Do not leave the spray liquid in the sprayer for long periods (such as during meal breaks or overnight).

RESISTANCE

TOPAS contains penconazole, a DMI fungicide. The possible development of disease resistant to TOPAS cannot be excluded or predicted. Disease control may be reduced accordingly if strains of fungi resistant to penconazole develop.

No more than 4 applications of a DMI containing fungicide should be made for the control of powdery mildew in grapes.

COMPANY ADVISORY INFORMATION

[This section is not part of the (EC) 1107/2009 Regulation and provides additional advice on product use at the discretion of the applicant]

Where application is by hand-held sprayer:

Minimise drift away from target area to reduce effects on non-target insects or other arthropods.

SAFETY PRECAUTIONS

(a) Operator protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following protective equipment:

WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

However engineering controls may replace personal protective equipment if COSHH assessment shows that they provide an equal or higher standard of protection.

WASH ALL PROTECTIVE CLOTHING thoroughly after use especially inside of gloves.

WASH CONCENTRATE from skin or eyes immediately.

WASH HANDS AND EXPOSED SKIN before meals and after work.

(b) Environmental protection

RISK TO NON-TARGET INSECTS OR OTHER ARTHROPODS. See Directions for Use.

Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area.

Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

(c) Storage and disposal

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

RINSE CONTAINER THOROUGHLY, by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.

Section 6 of the Health and Safety at Work Act Additional Product Safety Information

(This section does not form part of the product label under the Plant Protection Products Regulations 1995.)

The product label provides information on a specific pesticidal use of the product; do not use otherwise, unless you have assessed any potential hazard involved, the safety measures required and that the particular use has 'Extension of Use' approval or is otherwise permitted under the Plant Protection Products Regulations.

The information on this label is based on the best available information including data from test results.

SAFETY DATA SHEET

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

1.1 Product Identifier

Product Name: TOPAS

Design Code: A6209G

1.2 Relevant Identified Uses of the substance or mixture and uses advised against

Use: Fungicide

1.3 Details of the supplier of the safety data sheet

Company: Syngenta UK Ltd
CPC4, Capital Park, Fulbourn, Cambridge, CB21 5XE

Phone: (01223) 883400

Fax: (01223) 882195

Website: www.syngenta.co.uk

1.4 Emergency telephone number

Emergency phone No.: +44 (0) 1484 538444 (24h)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008

Eye irritation	Category 2	H319
Reproductive toxicity	Category 2	H361d
Chronic aquatic toxicity	Category 2	H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xn	Harmful
N	Dangerous for the environment.
R36	Irritating to eyes.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R63	Possible risk of harm to the unborn child.

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.
Precautions Statements	H411	Toxic to aquatic life with long lasting effects.
	P102	Keep out of reach of children.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P305/P351/P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P308/313	If exposed or concerned: Get medical advice/attention.
	P337/P313 P391	If eye irritation persists: Get medical advice/attention. Collect spillage Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.
Supplemental Information	EUH401	To avoid risks to human health and the environment comply with the instructions for use.

Hazardous components which must be listed on the label:

- penconazole

Labelling: EU Directives 67/548/EEC or 1999/45/EC

Symbol(s)	 HARMFUL	 DANGEROUS FOR THE ENVIRONMENT
R-phrases(s)	R36 R51/53 R66	Irritating to eyes. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Repeated exposure may cause skin dryness or cracking.
S-phrases(s)	S2 S13 S20/21 S35 S36/37 S39 S57	Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs. When using do not eat, drink or smoke. This material and its container must be disposed of in a safe way. Wear suitable protective clothing and gloves. Wear eye/face protection. Use appropriate containment to avoid environmental contamination.
Special labelling of certain mixtures	To avoid risks to man and the environment, comply with instructions for use.	

Hazardous components which must be listed on the label:

- penconazole

2.3 Other hazards

None known.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous Component(s)

Chemical Name	CAS No. EC No. Registration Number	Classification (67/548/EEC)	Classification (REGULATION (EC) No. 1272/2008)	Concentration
penconazole	66246-88-6 266-275-6	Xn, N R22 R50/53 R63	Acute Tox. 4; H302 Repr.2; H361d Aquatic Acute 1; H400 Aquatic Chronic1; H410	10.2 % w/w
cyclohexanone	108-94-1 203-631-1 01-2119453616-35-0005	Xn R10 R20/21/22 R38 R41	Flam. Liq.3; H226 Eye Dam.1; H318 Acute Tox.4; H302 R38 Acute Tox.4; H312 Skin Irrit.2; H315	5 - 15 % w/w
Calcium dodecyl benzene sulphonate	26264-06-2 84989-14-0 90194-26-6 247-557-8 284-903-7 290-635-1	Xi R41 R38	Skin Irrit.2; H315 Eye Dam.1; H318 Aquatic Chronic 3; H412	1 - 10 % w/w
2-methylpropan-1-ol	78-83-1 201-148-0 01-2119484609-23-0012	Xi R10 R37/38 R41 R67	Flam. Liq.3; H226 Skin Irrit.2; H315 Eye Dam.1; H318 STOT SE3; H335 STOT SE3; H336	1 - 5 % w/w

Substances for which there are Community workplace exposure limits

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-statements mentioned in this Section, see Section 16.

4. FIRST-AID MEASURES

4.1 Description of first aid measures

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

Inhalation: 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.

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.

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.

Ingestion: 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: No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Medical advice: There is no specific antidote available. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Extinguishing media - small fires

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media - large fires

Use alcohol-resistant foam.

Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

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.

5.3 Advice for fire-fighters

Wear full protective clothing and self-contained breathing apparatus.

Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Contain and collect spillage 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). If the

product contaminates rivers and lakes or drains inform respective authorities.

6.4 Reference to other sections

Refer to protective measures listed in sections 7 and 8

Refer to disposal considerations listed in section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

No special protective measures against fire required. Avoid contact with skin and eyes. When using, do not eat, drink or smoke. For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities

No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs.

7.3 Specific end use(s)

Registered Crop Protection products: For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Components	Exposure limit(s)	Type of exposure limit	Source
cyclohexanone	100 mg/m ³	8 h TWA	SUVA
	200 mg/m ³	15 min STEL	SUVA
	80 mg/m ³	8 h TWA	DFG
	100 mg/m ³	8 h TWA	ACGIH
	700 ppm	IDLH	NIOSH
	10 ppm, 41 mg/m ³ (Skin)	8 h TWA	UK HSE
	20 ppm, 82 mg/m ³ (Skin)	15 min STEL	UK HSE
	10 ppm, 40.8 mg/m ³ (Skin)	8 h TWA	IOELV
20 ppm, 81.6 mg/m ³	15 min STEL	IOELV	
2-methylpropan-1-ol	50 ppm, 150 mg/m ³	Ceiling Limit Value	SUVA
penconazole	7 mg/m ³	8 h TWA	SYNGENTA

The following recommendations for exposure controls/personal protection are intended for the manufacture, formulation and packaging of the product.

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. If airborne mist or vapours are generated, use local exhaust ventilation controls. Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit. Where necessary, seek additional occupational hygiene advice.

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. Personal protective equipment should be certified to appropriate standards.

Respiratory protection: No personal respiratory protective equipment normally required. A particular filter respirator filter may be necessary until effective technical measures are installed.

Hand protection: Suitable material: Nitrile rubber.

Break through time: >480 min

Glove thickness: 0.5 mm

Chemical resistant gloves should be used.

Gloves should be certified to an appropriate standard.

Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure.

The breakthrough time of gloves varies according to the thickness, material and manufacturer.

Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye Protection: If eye contact is possible, use tight-fitting chemical safety goggles.

Skin and body protection: Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material. Wash with soap and water after removing protective clothing. Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.). Wear as appropriate: impervious protective suit.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State:	Liquid
Form:	Liquid
Colour:	Light yellow to brownish
Odour:	Characteristic
Odour Threshold:	No data available
pH:	4 - 8 at 1 % w/v
Melting point/range:	No data available
Boiling point/boiling range:	> 143 °C
Flash point:	62.5 °C
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Lower explosion limit:	No data available
Upper explosion limit:	No data available
Vapour pressure:	No data available
Relative vapour density:	No data available
Density:	0.985 g/cm ³ at 20 °C
Solubility in other solvents:	No data available
Partition Coefficient n-octanol/water:	No data available
Autoignition temperature:	210 °C
Thermal decomposition:	No data available
Viscosity, dynamic:	7.53 mPa.s at 20 °C

Viscosity, kinematic:	4.37 mPa.s at 40 °C
Explosive properties:	No data available
Oxidizing properties:	Not explosive
9.2 Other Information	Not oxidising
Miscibility:	Miscible
Surface tension:	30.3 mN/m at 25 °C

10. STABILITY AND REACTIVITY

10.1 Reactivity:	See section 10.3 "Possibility of hazardous reactions".
10.2 Chemical Stability:	This product is stable when used in normal conditions.
10.3 Possibility of hazardous reactions:	No hazardous reactions by normal handling and storage according to provisions.
10.4 Conditions to avoid:	No decomposition if used as directed.
10.5 Incompatible materials:	No substances are known which lead to the formation of hazardous substances or thermal reactions.
10.6 Hazardous decomposition products:	Combustion or thermal decomposition will evolve toxic and irritant vapours.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity:	LD50 female rat, 2,574 mg/kg
Acute inhalational toxicity:	LC50 rat, > 5,294 mg/m ³ , 4 h
Acute dermal toxicity:	LD50 male and female rat, > 4,000 mg/kg
Skin corrosion/irritation:	Rabbit: non-irritating.
Serious eye damage/eye irritation:	Rabbit: irritating
Respiratory or skin sensitisation:	Guinea pig: not a skin sensitiser in animal tests.
Germ cell mutagenicity:	Penconazole, cyclohexanone and 2-methyl propan-1-ol did not show mutagenic effects in animal experiments.
Carcinogenicity:	Penconazole, cyclohexanone and 2-methyl propan-1-ol did not show carcinogenic effects in animal experiments.
Teratogenicity:	2-methylpropan-1-ol did not show any effects on foetal development.
Reproductive toxicity:	Penconazole is suspected of damaging the unborn child. Cyclohexanone and 2-methyl propan-1-ol did not show any effects on fertility in animal experiments.
STOT – single exposure:	Calcium dodecylbenzene sulphonate may cause respiratory irritation. 2-methylpropan-1-ol may cause drowsiness or dizziness and may cause respiratory irritation.
STOT – repeated exposure:	No adverse effect has been observed in chronic toxicity tests of penconazole.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

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

Toxicity to aquatic invertebrates: EC50 *Daphnia magna* (water flea), 36 mg/l, 48 h

Toxicity to aquatic plants: EbC50 *Dedmodesmus subspicatus* (green algae), 3.9 mg/l, 72 h
ErC50 *Dedmodesmus subspicatus* (green algae), 7.9 mg/l, 72 h

12.2 Persistence and degradability

Biodegradability: Penconazole is not readily biodegradable.

Stability in water

penconazole: Degradation half life: > 706 d
Persistent in water

Stability in soil

penconazole: Degradation half life: 138 d
Not persistent in soil

12.3 Bioaccumulative potential:

penconazole: Does not bioaccumulate.

12.4 Mobility in soil:

penconazole: The substance has very high mobility in soil.

12.5 Results of PBT and vPvB assessment

penconazole: This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).
Cyclohexanone: This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
2-methylpropan-1-ol: This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

None known.

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 for local recycling or waste disposal. Do not re-use empty containers.

14. TRANSPORT INFORMATION

Land transport (ADR/RID)

14.1 UN Number	UN 3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID N.O.S. (PENCONAZOLE)
14.3 Transport hazard class(es)	9
14.4 Packing Group	III
Labels	9
14.5 Environmental hazards Tunnel restriction code	Environmentally hazardous E

Sea transport (IMDG)

14.1 UN Number	UN 3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID N.O.S. (PENCONAZOLE)
14.3 Transport hazard class(es)	9
14.4 Packing Group	III
Labels	9
14.5 Environmental hazards	Marine pollutant

Air transport (IATA-DGR)

14.1 UN Number	UN 3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID N.O.S. (PENCONAZOLE)
14.3 Transport hazard class(es)	9
14.4 Packing Group	III
Labels	9

14.6 Special precautions for user

None.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. REGULATORY INFORMATION

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

Hazard pictograms



Signal Word Warning

Hazard Statements

H227	Combustible liquid.
H303	May be harmful if swallowed.
H320	Causes eye irritation.
H361d	Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243	Take precautionary measures against static discharge.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305/P351/P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308/313	If exposed or concerned: Get medical advice/attention.
P337/P313	If eye irritation persists: Get medical advice/attention.
P391	Collect spillage
P403/P235	Store in a well-ventilated place. Keep cool. Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Supplemental Information

EUH401 To avoid risks to human health and the environment comply with the instructions for use.

Hazardous components which must be listed on the label:

- penconazole

15.2 Chemical Safety Assessment

A chemical safety assessment is not required for this substance.

Full text of R phrases referred to under Section 2 and 3:

R10	Flammable
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R22	Harmful if swallowed
R37/38	Irritating to respiratory system and skin
R38	Irritating to skin
R41	Risk of serious damage to eyes
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R63	Possible risk of harm to the unborn child
R67	Vapours may cause drowsiness and dizziness

Full text of H-statements referred to under sections 2 and 3:

H226	Flammable liquid and vapour
H302	Harmful if swallowed
H312	May in contact with skin
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness and dizziness
H361d	Suspected of damaging the unborn child
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
H412	Harmful to aquatic life with long lasting effects

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

16. OTHER INFORMATION

Approval number, MAPP 16765.

Use plant protection products safely. Always read the label and product information before use.

Based upon SDS release dated 15/10/2014, version 16 with local amendment.