

Caramba®

An emulsifiable concentrate containing 60 g/litre metconazole. A fungicide for the control of a wide range of diseases in winter and spring wheat, durum wheat, winter and spring barley, triticale, rye and oilseed rape; and a spring plant growth regulator in oilseed rape.

An emulsifiable concentrate containing 60 g/litre metconazole, aliphatic hydrocarbon and pentanol.

Risk and Safety Information

Danger:

Flammable liquid and vapour.

Causes serious eye damage.

Causes skin irritation.

May cause an allergic skin reaction.

May be fatal if swallowed and enters airways.

May cause respiratory irritation.

Suspected of damaging the unborn child.

Very toxic to aquatic life with long lasting effects.

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

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

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

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

IF SWALLOWED: Immediately call a POISON CENTER

or doctor/physician.

Store in a well-ventilated place.

Keep container tightly closed.

Dispose of contents/container to a licensed waste

disposal contractor or collection site except for triple

rinsed empty containers which can be

disposed of as non-hazardous waste.

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

5 L e

PCS 03954

UN 1993

Packaging Group III

Flammable liquid N.O.S.

(contains pentanol/amylic alcohol, metconazole 7%)

Marine pollutant

Supplied by:
BASF Ireland Limited
P.O. Box 4, Earl Road
Cheadle Hulme, CHEADLE
Cheshire SK8 6QG, UK

Tel: 01 825 5701

Fax: 01 825 2038

Emergency Information

(24 hours freephone):

0049 180 227 3112

Technical Enquiries:

0044 (0)845 602 2553 (office hours)

Authorization holder:
BASF plc, P O Box 4,
Earl Road, Cheadle Hulme,
Cheshire, SK8 6QG, UK

BASF
The Chemical Company

® = registered trademark of BASF

81085214IE1034



SAFETY PRECAUTIONS

Operator protection

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

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.

IF YOU FEEL UNWELL, seek medical advice immediately (show the label where possible).

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

WHEN USING DO NOT EAT, DRINK OR SMOKE

Environmental protection

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).

To protect aquatic organisms respect an unsprayed buffer zone of 5m to surface water bodies.

Direct spray away from water.

Storage and disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS

KEEP OUT OF REACH OF CHILDREN

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 container safely.

DO NOT RE-USE CONTAINER for any purpose

PROTECT FROM FROST

DO NOT STORE IN DIRECT SUNLIGHT

This product is approved under the S.I. No 159 of 2012 (Ireland)

IMPORTANT INFORMATION

FOR USE ONLY AS AN AGRICULTURAL FUNGICIDE and PLANT GROWTH REGULATOR, as directed below:

Crops	Maximum individual Dose	Maximum Total Dose Per Crop	Latest Time of Application
Winter wheat, Spring wheat, Durum wheat, Winter barley, Spring barley, Triticale, Rye	1.5 litres product/ha	3 litres product/ha	Before early milk stage (GS 73)
Winter and spring oilseed rape	1.2 litres product/ha	2.4 litres product/ha	10% of pods at final size

Other specific restrictions

A minimum interval of 14 days must be observed between applications on oilseed rape.

A minimum interval of 21 days must be observed between applications on cereals.

To protect birds, only one application is allowed on cereals before GS 29 (end of tillering).

READ ALL PRECAUTIONS BEFORE USE.

DIRECTIONS FOR USE

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

Caramba is a broad spectrum fungicide with curative and protectant activity, which can be used on all commercial varieties of winter and spring wheat, durum wheat, winter and spring barley, triticale and rye. Caramba can also be used on winter and spring oilseed rape. When applied to oilseed rape in the spring, Caramba can provide plant growth regulation in the form of a reduction in crop height.

1. Restrictions/Warnings

For professional use only.

For use by tractor mounted/trailed sprayers only.

Do not apply to oilseed rape crops that are damaged or stressed from factors such as previous product use, adverse weather conditions (e.g. drought, frost or waterlogging), nutrient deficiency or pest attacks.

Caramba is formulated specifically for use on cereals and oilseed rape.

The addition of further adjuvants is not advised.

Caramba should not be applied with pyrethroids to oilseed rape at flowering.

Ensure the sprayer is free from previous chemical residues that may harm the crop. Use of a detergent cleaner is advised before and after use.

Avoid spray drift on to neighbouring crops and field margins.

2. Crop recommendations

2.1 Cereals

Caramba is a broad spectrum fungicide with curative and protectant activity, which can be used on all commercial varieties of winter and spring wheat, durum wheat, winter and spring barley, triticale and rye for disease control as summarised below

	Wheat	Barley	Triticale	Rye
Septoria leaf blotch (<i>Mycosphaerella graminicola</i>)	MC	--	MC	--
Glume blotch (<i>Septoria nodorum</i>)	MC	--	MC	--
Yellow rust	C	C	C	C
Brown rust	C	C	C	C
<i>Rhynchosporium secalis</i> (leaf scald)	--	R	--	R
Net blotch	--	R	--	--
Powdery mildew (<i>Blumeria graminis</i>)	MC	MC	MC	MC
<i>Fusarium</i> ear blight	R	--	R	--

C = full control

MC = moderate control

R = reduction

Time of Application

For effective control Caramba is best applied when disease starts to develop in the crop.

Application at an early stage of mildew development (not more than 3% infection on any green leaf) will give moderate control. Where mildew has become established, the use of a specific mildewicide will improve control and help prevent the development of resistant strains.

For optimum results on yellow rust apply before any leaf has more than 1% infection or as a preventative treatment on susceptible varieties after the flag leaf has fully emerged (GS 39).

Reduction of ear Fusarium may be achieved when applied between full ear emergence and anthesis complete (GS 69).

For control of brown rust treat susceptible varieties as soon as rust is seen and spray more resistant varieties before any of the top three leaves have more than 1-2% infection.

Spray as soon as net blotch is seen on any of the top three leaves. A further treatment will be necessary where disease is well established.

Caramba may be applied before early milk stage (GS 73).

Rate of Application:

1.5 l/ha.

2.2 Oilseed Rape

All varieties of winter and spring oilseed rape may be treated.

Disease control

Caramba provides control of *Alternaria* and a reduction of Phoma leaf spot (*Phoma lingam*) and light leaf spot in oilseed rape.

	Alternaria spp	Phoma leaf spot (<i>Phoma lingam</i>)	Light Leaf Spot
Oilseed Rape	Control	Reduction	Reduction

Time of Application

Apply as soon as diseases start to develop, and repeat as required.

Rate of Application

1.2 l/ha.

Crop height reduction

When applied to oilseed rape in the spring, Caramba can provide plant growth regulation in the form of a reduction in crop height.

Time of Application

Apply during stem extension in the spring, once the oilseed rape crop is actively growing (GS 31-51).

Rate of Application

1.2 l/ha.

3. Resistance Management

Caramba contains metconazole, a DMI fungicide. Resistance to some DMI fungicides has been identified in Septoria leaf blotch (*Mycosphaerella graminicola*) which may seriously affect the performance of some products. For further advice on resistance management in DMIs contact Teagasc, your agronomist or specialist advisor, and visit the FRAG-UK website.

Cereal Powdery mildew strains with decreased sensitivity to triazoles are common in Ireland. Where these occur or develop, Caramba may not give satisfactory control.

For crop/pathogen situations where repeated spray applications are required, alternation or mixtures with an effective non cross-resistant fungicide are recommended. Fungicide use does not replace the need for non-chemical cultural control methods e.g. resistant crop varieties, good agronomic practice, plant hygiene.

4. Following Crops

After treating a cereal or oilseed rape crop with Caramba, the crops listed below may be sown as a following crop:-

Beans	Clover	Oilseed rape	Ryegrass
Cabbage	Lettuce	Onions	Sugar beet
Carrots	Linseed	Peas	Sunflower
Cereals	Maize	Potatoes	

The effects of Caramba on other crops has not been assessed.

5. Mixing and Application

5.1 Mixing

Never prepare more spray solution than is required.

Three quarters fill the tank with water and start the agitation. To ensure thorough mixing of the product, invert the container several times before opening. Add the required quantity of Caramba to the spray tank while re-circulating. Fill up the tank with water and continue agitation until spraying is completed.

On emptying the container, rinse container thoroughly by using an integrated pressure rinsing device or manually rinsing three times. Add washings to spray tank at time of filling and dispose of container safely.

5.1 Application

In cereals apply Caramba in 200 to 300 l/ha water

In oilseed rape apply Caramba in 200-400 l/ha water.

Apply as a MEDIUM spray, as defined by BCPC. In dense crops use the higher volume to achieve adequate penetration and good coverage of the crop

To ensure optimum spray coverage and minimize spray drift, adjust the spray boom to the appropriate height above the crop, according to guidance provided by the sprayer and/or nozzle manufacture.

Sprayers should be thoroughly cleaned out immediately after use

Caramba may be applied in reduced water volumes as specified in the table below, although efficacy at this reduced volume has not been evaluated. Application of this product at reduced-volume is at user's risk with regard to biological efficacy.

Crop	Rate	Minimum water volume
Winter wheat Spring wheat Durum wheat Winter barley Spring barley Triticale Rye	1.5 litres per hectare	110 litres per hectare
Oilseed rape	1.2 litres per hectare	90 litres per hectare

6. Compatibility

For current details of other compatible tank-mixes contact the BASF Technical Services
Hotline: ++44 845 602 2553

Caramba should not be applied with pyrethroids to oilseed rape at flowering.

All tank mixes should be used immediately after mixing.

7. Trademarks

Caramba is a trademark of BASF.

The following does not form part of the product label under the S.I. No 159 of 2012.

With many products there is a general risk of resistance developing to the active ingredients. For this reason a change in activity cannot be ruled out. It is generally impossible to predict with certainty how resistance may develop because there are so many crop and use connected ways of influencing this. We therefore have to exclude liability for damage or loss attributable to any such resistance that may develop. To help minimise any loss in activity the BASF recommended rate should in all events be adhered to.

Numerous, particularly regional or regionally attributable, factors can influence the activity of the product. Examples include weather and soil conditions, crop plant varieties, crop rotation, treatment times, application amounts, admixture with other products, appearance of organisms resistant to active ingredients and spraying techniques. Under particular conditions a change in activity or damage to plants cannot be ruled out. The manufacturer or supplier is therefore unable to accept any liability in such circumstances. All goods supplied by us are of high grade and we believe them to be suitable, but as we cannot exercise control over their mixing or use or the weather conditions during and after application, which may affect the performance of the material, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose of our goods are excluded and no responsibility will be accepted by us for any damage or injury whatsoever arising from their storage, handling, application or use; but nothing should be deemed to exclude or restrict any liability upon us which cannot be excluded or restricted under the provisions of the Unfair Contract Terms Act 1977 or any similar applicable law.

Additional Product Safety Information

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 "off-label" approval or is otherwise permitted under S.I. No 159 of 2012.

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

Safety Data Sheet

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

1.1. Product identifier

CARAMBA

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

Relevant identified uses: crop protection product, fungicide

1.3. Details of the supplier of the safety data sheet

Company:

BASF SE
67056 Ludwigshafen GERMANY

Contact address:

BASF Ireland Ltd.
Inchera Industrial Estate, Little Island County Cork, REPUBLIC OF IRELAND

Telephone: +353 21 451-7100

E-mail address: product-safety-north@basf.com

1.4. Emergency telephone number

International emergency number: Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Asp. Tox. 1

Flam. Liq. 3

Skin Corr./Irrit. 2

Eye Dam./Irrit. 1

Skin Sens. 1

Repr. 2 (unborn child)

STOT SE 3 (irritating to respiratory system)

Aquatic Acute 1

Aquatic Chronic 1

According to Directive 67/548/EEC or 1999/45/EC

Repr. Cat. 3

(as in Annex I of Directive 67/548/EEC)

Possible Hazards: Flammable.

Irritating to skin.

Risk of serious damage to eyes.

May cause sensitization by skin contact.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Possible risk of harm to the unborn child.

Harmful: may cause lung damage if swallowed.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

Globally Harmonized System (GHS) in accordance with IE regulations.

Pictogram:



Signal Word: Danger

Hazard Statement:

H226

Flammable liquid and vapour.

H318

Causes serious eye damage.

H315

Causes skin irritation.

H317

May cause an allergic skin reaction.

H304

May be fatal if swallowed and enters airways.

H335

May cause respiratory irritation.

H361d

Suspected of damaging the unborn child.

H400

Very toxic to aquatic life.

H410

Very toxic to aquatic life with long lasting effects.

EUH401

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

Precautionary Statements (Prevention):

P201

Obtain special instructions before use.

P210

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P240

Ground/bond container and receiving equipment.

P241

Use explosion-proof electrical/ventilating/lighting/equipment.

P242

Use only non-sparking tools.

P243

Take precautionary measures against static discharge.

P261d

Avoid breathing vapours.

P264

Wash with plenty of water and soap thoroughly after handling.

P271

Use only outdoors or in a well-ventilated area.

P272

Contaminated work clothing should not be allowed out of the workplace.

P280

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

Precautionary Statements (Response):

P301 + P310

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P303 + P361 + P353

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.

Rinse skin with water/shower.

P304 + P340

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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 + P313 IF exposed or concerned: Get medical advice/attention.
P331 Do NOT induce vomiting.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P361 Remove/Take off immediately all contaminated clothing.
P370 + P378.14 In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction.
P391 Collect spillage.

Precautionary Statements (Storage):

P233 Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Precautionary Statements (Disposal):

P501.1 Dispose of contents/container in accordance with local regulations.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: METCONAZOLE, PENTANOL, BRANCHED AND LINEAR, NAPHTHA/PETROLEUM

According to Directive 67/548/EEC or 1999/45/EC

Classification/labelling in accordance with Irish regulations.

Hazard symbol(s)

Xn Harmful.
N Dangerous for the environment.



R-phrase(s)

R10 Flammable.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R43 May cause sensitization by skin contact.
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.
R65 Harmful: may cause lung damage if swallowed.

S-phrase(s)

S2 Keep out of the reach of children.
S13 Keep away from food, drink and animal feeding stuffs.
S20/21 When using do not eat, drink or smoke.
S24 Avoid contact with skin.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S35 This material and its container must be disposed of in a safe way.
S37 Wear suitable gloves.
S39 Wear eye/face protection.
S57 Use appropriate container to avoid environmental contamination.
S59 Refer to manufacturer/supplier for information on recovery/recycling.
S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Hazard determining component(s) for labelling: METCONAZOLE, PENTANOL, BRANCHED AND LINEAR, NAPHTHA/PETROLEUM

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]
See section 12 – Results of PBT and vPvB assessment.

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

crop protection product, fungicide, Emulsifiable concentrate (EC)

Hazardous ingredients (GHS)

according to Regulation (EC) No. 1272/2008

metconazole (ISO); (1RS,5RS;1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol

Content (W/W): 6.7 %

CAS Number: 125116-23-6

INDEX-Number: 613-284-00-1

Acute Tox. 4 (oral)
Repr. 2 (unborn child)
Aquatic Chronic 2
H302, H411, H361d

Pentanol, branched and linear

Content (W/W): < 30 %

CAS Number: 94624-12-1

EC-Number: 305-536-1

REACH registration number:

01- 2119492626-27

INDEX-Number: 603-006-00-7

Flam. Liq. 3
Acute Tox. 4 (Inhalation – mist)
STOT SE 3 (irr. to respiratory syst.)
H226, H332, H335

Naphtha (petroleum), heavy alkylate

Content (W/W): < 25 %

CAS Number: 64741-65-7

Asp. Tox. 1
Flam. Liq. 3
Aquatic Chronic 4
H413, H226, H304, EUH066

2-Methylbutan-1-ol

Content (W/W): < 10 %

CAS Number: 137-32-6

EC-Number: 205-289-9

REACH registration number:

01- 2119492592-30

INDEX-Number: 603-006-00-7

Flam. Liq. 3
Acute Tox. 4 (Inhalation – vapour)
Skin Corr./Irrit. 2
Eye Dam./Irrit. 2
STOT SE 3 (irr. to respiratory syst.)
H226, H319, H315, H332, H335

3-Methylbutan-1-ol

Content (W/W): < 5 %

CAS Number: 123-51-3

EC-Number: 204-633-5

REACH registration number:

01- 2119493725-26

INDEX-Number: 603-006-00-7

Flam. Liq. 3
Acute Tox. 4 (Inhalation – vapour)
Skin Corr./Irrit. 2
Eye Dam./Irrit. 2
STOT SE 3 (irr. to respiratory syst.)
H226, H319, H315, H332, H335

Hazardous ingredients
according to Directive 1999/45/EC

metconazole (ISO): (1RS,5RS;1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol

Content (W/W): 6.7%
CAS Number: 125116-23-6
INDEX-Number: 613-284-00-1
Hazard symbol(s): Xn, N
R-phrase(s): 22, 63, 51/53
Repr. Cat. 3

Pentanol, branched and linear

Content (W/W): < 30%
CAS Number: 94624-12-1
EC-Number: 305-536-1
REACH registration number: 01-2119492626-27
INDEX-Number: 603-006-00-7
Hazard symbol(s): Xn
R-phrase(s): 10, 20, 37/38, 66

Naphtha (petroleum), heavy alkylate

Content (W/W): < 25%
CAS Number: 64741-65-7
Hazard symbol(s): Xn
R-phrase(s): 10, 53, 65, 66

2-Methylbutan-1-ol

Content (W/W): < 10%
CAS Number: 137-32-6
EC-Number: 205-289-9
REACH registration number: 01-2119492592-30
INDEX-Number: 603-006-00-7
Hazard symbol(s): Xn
R-phrase(s): 10, 20, 36/37/38, 66

3-Methylbutan-1-ol

Content (W/W): < 5%
CAS Number: 123-51-3
EC-Number: 204-633-5
REACH registration number: 01-2119493725-26
INDEX-Number: 603-006-00-7
Hazard symbol(s): Xn
R-phrase(s): 10, 20, 36/37/38, 66

For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled: Immediately inhale corticosteroid dose aerosol. Keep patient calm, remove to fresh air, seek medical attention.

On skin contact: Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes: Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion: Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention. Do not induce vomiting due to aspiration hazard.

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

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary edema.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media: water spray, foam, dry powder, carbon dioxide

5.2. Special hazards arising from the substance or mixture

carbon monoxide, hydrogen chloride, Carbon dioxide, nitrogen oxides, organochloric compounds The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters

Special protective equipment:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information: In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.

6.2. Environmental precautions

Do not allow contamination of public drains or surface or ground waters. Inform local water plc if spillage enters drains and the Environmental Protection Agency if it enters surface or ground waters. Keep people and animals away.

6.3. Methods and material for containment and cleaning up

For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

For large amounts: Dike spillage. Pump off product.

Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

No special measures necessary if stored and handled correctly. Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

Protection against fire and explosion:

Vapours may form ignitable mixture with air. Prevent electrostatic charge – sources of ignition should be kept well clear - fire extinguishers should be kept handy.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from foods and animal feeds.

Further information on storage conditions: Keep away from heat. Protect from direct sunlight.

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

Refer to the current schedule of occupational exposure standards published by the Irish HSA. For normal use and handling refer to the product label/leaflet. In all other cases the following apply.

123-51-3: 3-Methylbutan-1-ol

TWA value 360 mg/m³ ; 100 ppm (OEL (IE))

STEL value 450 mg/m³ ; 125 ppm (OEL (IE))

8.2. Exposure controls

Personal protective equipment

Respiratory protection: Suitable respiratory protection for higher concentrations or long-term effect: Combination filter for gases/vapours of organic, inorganic, acid inorganic and alkaline compounds (e.g. EN 14387 Type ABEK).

Hand protection: Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) and other

Eye protection: Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection: Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid	
Colour:	colourless to pale yellow	
Odour:	characteristic	
Odour threshold:	Not determined due to potential health hazard by inhalation.	
pH value:	approx. 5.5 – 7.5 (water, 1% (m), 20 °C)	(pH Meter)
Melting point:	approx. < -30 °C	
Boiling range:	Information applies to the solvent. approx. 172 – 185 °C	
Flash point:	43 °C	(Directive 92/69/EEC, A.9)
Evaporation rate:	not applicable	
Flammability:	Flammable.	
Lower explosion limit:	0.6% (V)	
Upper explosion limit:	Information applies to the solvent. 8% (V)	
Ignition temperature:	Information applies to the solvent. approx. 289 °C	(Directive 92/69/EEC, A.15)
Vapour pressure:	approx. 160 Pa (20 °C)	
Relative density:	Information applies to the solvent. approx. 0.89 (20 °C)	(calculated)
Relative vapour density (air):	not determined	
Solubility in water:	emulsifiable	
Partitioning coefficient n-octanol/water (log Kow):	not applicable	
Thermal decomposition:	No decomposition if correctly stored and handled.	
Viscosity, dynamic:	approx. 5.3 mPa.s (40 °C)	
Viscosity, kinematic:	approx. 6 mm ² /s (40 °C)	(measured)
Explosion hazard:	not explosive	(Directive 92/69/EEC, A.14)
Fire promoting properties:	not fire-propagating	(Directive 92/69/EEC, A.17)

9.2. Other information

Other Information:

If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

10.4. Conditions to avoid

See MSDS section 7 – Handling and storage.

10.5. Incompatible materials

Substances to avoid: strong oxidizing agents, strong bases, strong acids

10.6. Hazardous decomposition products

Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity: Of low toxicity after single ingestion. Virtually nontoxic after a single skin contact.

Experimental/calculated data:

LD₅₀ rat (oral): 2,601 mg/kg (OECD Guideline 401)

LC₅₀ rat (by inhalation): 5.3 mg/l 4 h (OECD Guideline 403) An aerosol was tested.

LD₅₀ rat (dermal): > 4,000 mg/kg (OECD Guideline 402)

Irritation

Assessment of irritating effects: May cause severe damage to the eyes. Skin contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation rabbit: Risk of serious damage to eyes. (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization: Sensitization after skin contact possible.

Experimental/calculated data: Guinea pig maximization test guinea pig: Caused skin sensitization in animal studies. (Guideline 92/69/EEC, B.6)

Germ cell mutagenicity

Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity

Assessment of carcinogenicity:

The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Reproductive toxicity

Assessment of reproduction toxicity:

The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Developmental toxicity

Assessment of teratogenicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: metconazole (ISO); (1RS,5RS;1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol

Assessment of teratogenicity:

Indications of possible developmental toxicity/teratogenicity were seen in animal studies.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: metconazole (ISO); (1RS,5RS;1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol

Assessment of repeated dose toxicity:

Adaptive effects were observed after repeated exposure in animal studies.

Aspiration hazard

May also damage the lung at swallowing (aspiration hazard).

Other relevant toxicity information

Misuse can be harmful to health.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:

Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Toxicity to fish:

LC₅₀ (96 h) 15 mg/l, *Oncorhynchus mykiss* (Directive 92/69/EEC, C.1, static)

Aquatic invertebrates:

EC₅₀ (48 h) 0.365 mg/l, *Daphnia magna* (Directive 92/69/EEC, C.2, static)

Aquatic plants:

EC₅₀ (72 h) 8.38 mg/l (growth rate), *Selenastrum capricornutum* (OECD Guideline 201)

12.2. Persistence and degradability

Assessment biodegradation and elimination (H₂O):

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: metconazole (ISO); (1RS,5RS;1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol
Assessment biodegradation and elimination (H2O): Not readily biodegradable (by OECD criteria).

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: metconazole (ISO); (1RS,5RS;1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol

Bioaccumulation potential:

Bioconcentration factor: 51 – 80, Lepomis macrochirus Does not accumulate in organisms.

12.4. Mobility in soil

Assessment transport between environmental compartments:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: metconazole (ISO); (1RS,5RS;1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol

Assessment transport between environmental compartments:

The substance will not evaporate into the atmosphere from the water surface.

Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

12.5. Results of PBT and vPvB assessment

The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Other ecotoxicological advice: Do not discharge product into the environment without control.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Must be sent to a suitable incineration plant, observing local regulations.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

SECTION 14: Transport Information

Land transport

ADR
UN number UN1993
UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (contains PENTANOL/AMYL ALCOHOL, METCONAZOLE 7%)
Transport hazard class(es): 3, EHSM
Packing group: III
Environmental hazards: yes
Special precautions for user: Tunnel code: D/E SP 640 E

RID

UN number UN1993
UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (contains PENTANOL/AMYL ALCOHOL, METCONAZOLE 7%)
Transport hazard class(es): 3, EHSM
Packing group: III
Environmental hazards: yes
Special precautions for user: SP 640 E

Inland waterway transport

ADN

UN number UN1993
UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (contains PENTANOL/AMYL ALCOHOL, METCONAZOLE 7%)
Transport hazard class(es): 3, EHSM
Packing group: III
Environmental hazards: yes
Special precautions for user: SP 640 E
Transport in inland waterway vessel: Not evaluated

Sea transport

IMDG

UN number UN 1993
UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (contains PENTANOL/AMYL ALCOHOL, METCONAZOLE 7%)
Transport hazard class(es): 3, EHSM
Packing group: III
Environmental hazards: yes
Marine pollutant: YES
Special precautions for user: None known

Air transport

IATA/ICAO

UN number: UN 1993
UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (contains PENTANOL/AMYL ALCOHOL, METCONAZOLE 7%)
Transport hazard class(es): 3
Packing group: III
Environmental hazards: No Mark as dangerous for the environment is needed
Special precautions for user: None known

14.1. UN number

See corresponding entries for "UN number" for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

SECTION 15: Regulatory Information

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

For the user of this plant-protective product applies: 'To avoid risks to man and the environment, comply with the instructions for use.' (Directive 1999/45/EC, Article 10, No. 1.2)

This product may be subject to the Seveso II Directive and amendments if specific threshold tonnages are exceeded.

For further medical advice Doctors should contact the National Poison Information Centre at Beaumont Hospital, Dublin.

15.2. Chemical Safety Assessment

Advice on product handling can be found in sections 7 and 8 of this safety data sheet.

SECTION 16: Other Information

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

Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

Xn	Harmful.
N	Dangerous for the environment.
22	Harmful if swallowed.
63	Possible risk of harm to the unborn child.
51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
10	Flammable.
20	Harmful by inhalation.
37/38	Irritating to respiratory system and skin.
66	Repeated exposure may cause skin dryness or cracking.
53	May cause long-term adverse effects in the aquatic environment.
65	Harmful: may cause lung damage if swallowed.
36/37/38	Irritating to eyes, respiratory system and skin.
Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquid
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
Skin Sens.	Skin sensitization
Repr.	Reproductive toxicity
STOT SE	Specific target organ toxicity — single exposure
Aquatic Acute	Hazardous to the aquatic environment – acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Acute Tox.	Acute toxicity
Repr. Cat. 3	Reprotoxic substances (fertility or development) Category 3: Substances which cause concern for humans owing to possible developmental toxic effects or substances which cause concern for human fertility.
H302	Harmful if swallowed.
H411	Toxic to aquatic life with long lasting effects.
H361d	Suspected of damaging the unborn child.
H226	Flammable liquid and vapour.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H413	May cause long lasting harmful effects to aquatic life.
H304	May be fatal if swallowed and enters airways.
EUH066	Repeated exposure may cause skin dryness or cracking.
H319	Causes serious eye irritation.
H315	Causes skin irritation.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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