Caramba® 90

MAPP 15524
An emulsifiable concentrate containing 90 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, oilseed rape, peas, field beans and lupins; and a spring plant growth regulator in oilseed rape.

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

SAFETY PRECAUTIONS

Operator protection
Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:
WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.
WEAR SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.
However, engineering controls may replace personal protective equipment if a COSHH assessment shows that they provide an equal or higher standard of protection.
IF YOU FEEL UNWELL, seek medical advice immediately (show the label where possible).

Environmental protection
DO NOT CONTAMINATE SURFACE WATERS OR DITCHES with chemical or used container.
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 unspayed buffer zone to surface water bodies in line with LERAP requirements.
DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 metres of the top of the bank of a static or flowing water body, unless a Local Environmental Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1 metre from the top of a ditch which is dry at the time of application. DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1 metre of the top of the bank of a static or flowing water body. Aim spray away from water.
This product qualifies for inclusion within the Local Environmental Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer, either a LERAP must be carried out in accordance with CRD’s published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for three years.

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

UN 3082
Packing Group III
Environmentally hazardous substance, liquid, N.O.S.
(contains metconazole 9%)
Marine Pollutant

5 L

Supplied by:
BASF plc
Crop Protection
PO Box 4, Earl Road
Cheadle Hulme, CHEADLE
Cheshire SK8 6QG
Tel: 0161 485 6222
Emergency Information:
(24 hours freephone):
0049 180 2273112
Technical Enquiries:
0845 602 2553 (office hours)

® = Registered trademark of BASF
Caramba® 90
An emulsifiable concentrate containing 90 g/litre metconazole and diethylene glycol.

WARNING:
CAUSES SERIOUS EYE IRRITATION
MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE
SUSPECTED OF DAMAGING THE UNBORN CHILD
TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

DO NOT BREATHE VAPOURS.
OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.
WEAR PROTECTIVE GLOVES/CLOTHING.
IF EXPOSED OR CONCERNED: GET MEDICAL ADVICE/ATTENTION.
GET MEDICAL ADVICE/ATTENTION IF YOU FEEL UNWELL.
COLLECT SPILLAGE.

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

This product is approved under the Plant Protection Products Regulations.

### IMPORTANT INFORMATION

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

<table>
<thead>
<tr>
<th>Crop</th>
<th>Maximum Individual Dose</th>
<th>Maximum Total Dose Per Crop</th>
<th>Latest Time of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter wheat, Spring wheat,</td>
<td>1.0 litre product/ha</td>
<td>2.0 litres product/ha</td>
<td>Up to and including GS 71 (caryopsis watery ripe stage)</td>
</tr>
<tr>
<td>Durum wheat, Winter barley,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring barley, Triticale and Rye</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oilseed rape</td>
<td>0.8 litres product/ha</td>
<td>1.6 litres product/ha</td>
<td>10% of pods at final size</td>
</tr>
<tr>
<td>Combining peas, Vining peas,</td>
<td>0.8 litres product/ha</td>
<td>1.6 litres product/ha</td>
<td>14 days before harvest</td>
</tr>
<tr>
<td>Field beans and Lupins</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other specific restrictions:
A minimum interval of 14 days must be observed between applications on oilseed rape, peas, beans and lupin.
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 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.
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 90 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 90 can also be used on oilseed rape, field beans, combining and vining peas and lupins. When applied to oilseed rape in the spring, Caramba 90 can provide plant growth regulation in the form of a reduction in crop height.

1. Restrictions/Warnings

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 90 is formulated specifically for use on oilseed rape and legumes. The addition of further adjuvants is not advised.

Caramba 90 should not be applied with pyrethroids to flowering oilseed rape.

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 90 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:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Winter wheat</th>
<th>Spring wheat</th>
<th>Durum wheat</th>
<th>Winter barley</th>
<th>Spring barley</th>
<th>Triticale</th>
<th>Rye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Septoria tritici</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td></td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Yellow rust</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Brown rust</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Rhynchosporium</td>
<td></td>
<td></td>
<td></td>
<td>R</td>
<td>R</td>
<td>MC</td>
<td></td>
</tr>
<tr>
<td>Net blotch</td>
<td></td>
<td></td>
<td></td>
<td>R</td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Powdery mildew</td>
<td>MC</td>
<td>MC</td>
<td>MC</td>
<td>MC</td>
<td>MC</td>
<td>MC</td>
<td>MC</td>
</tr>
<tr>
<td>Ear Fusarium</td>
<td>GR</td>
<td>GR</td>
<td>GR</td>
<td></td>
<td></td>
<td></td>
<td>GR</td>
</tr>
</tbody>
</table>

C = full control
GR = good reduction
MC = moderate control
R = reduction

Time of Application

Apply as soon as diseases start to develop in the crop and repeat as required.

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).
Good 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.

Rate of Application
1.0 l/ha

2.2 Oilseed rape
All varieties of oilseed rape may be treated.

Disease control
Caramba 90 provides control of *Alternaria*, and a reduction of phoma leaf spot, phoma stem canker (*Phoma lingam*) and light leaf spot.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Alternaria spp</th>
<th>Phoma leaf spot &amp; phoma stem canker (<em>Phoma lingam</em>)</th>
<th>Light leaf spot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oilseed rape</td>
<td>Control</td>
<td>Reduction</td>
<td>Reduction</td>
</tr>
</tbody>
</table>

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

Rate of Application
0.8 l/ha.

Crop height reduction
When applied to oilseed rape in the spring, Caramba 90 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
0.8 l/ha.

2.3 Combining Peas, Vining Peas, Field Beans and Lupins
All varieties of peas and field beans may be treated.

Consult processor before using on vining peas grown for processing.

Safety to lupins has not been established. If possible, a small area of the lupin crop should be treated before treating the whole crop.

Disease control
Caramba 90 can be used for the reduction of *Ascochyta* and *Mycosphaerella* species, the reduction of *Botrytis* and the control of rust on peas.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Ascochyta</th>
<th>Mycosphaerella</th>
<th>Botrytis</th>
<th>Rust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combining peas Vining peas</td>
<td>Reduction</td>
<td>Reduction</td>
<td>Reduction</td>
<td>Control</td>
</tr>
<tr>
<td>Field beans</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Control</td>
</tr>
</tbody>
</table>
Qualified Minor Use Recommendations
Caramba 90 can be used for the reduction of *Ascochyta*, the reduction of *Botrytis* and the control of rust on lupins.

<table>
<thead>
<tr>
<th></th>
<th>Ascochyta</th>
<th>Mycosphaerella</th>
<th>Botrytis</th>
<th>Rust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lupins</td>
<td>Reduction</td>
<td>-</td>
<td>Reduction</td>
<td>Control</td>
</tr>
</tbody>
</table>

Time of Application

<table>
<thead>
<tr>
<th></th>
<th>Ascochyta</th>
<th>Mycosphaerella</th>
<th>Botrytis</th>
<th>Rust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combining peas</td>
<td>Start of flowering*</td>
<td>Start of flowering*</td>
<td>Mid flowering*</td>
<td>First sign of rust pustules*</td>
</tr>
<tr>
<td>Vining peas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field beans</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Start of petal fall*</td>
</tr>
<tr>
<td>Lupins</td>
<td>start of petal fall*</td>
<td>-</td>
<td>Start of petal fall*</td>
<td>Start of petal fall*</td>
</tr>
</tbody>
</table>

* repeat 3-4 weeks later, if required.

Rate of Application
0.8 l/ha.

3. Resistance Management
Caramba 90 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 your agronomist or specialist advisor, and visit the FRAG-UK website.

Cereal Powdery mildew strains with decreased sensitivity to triazoles are common in the UK. Where these occur or develop, Caramba 90 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, oilseed rape or legume crop with Caramba 90, the crops listed below may be sown as a following crop:-

<table>
<thead>
<tr>
<th>Beans</th>
<th>Clover</th>
<th>Oilseed rape</th>
<th>Ryegrass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabbage</td>
<td>Lettuce</td>
<td>Onions</td>
<td>Sugar beet</td>
</tr>
<tr>
<td>Carrots</td>
<td>Linseed</td>
<td>Peas</td>
<td>Sunflower</td>
</tr>
<tr>
<td>Cereals</td>
<td>Maize</td>
<td>Potatoes</td>
<td></td>
</tr>
</tbody>
</table>

The effects of Caramba 90 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 90 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.

5.2 Application

In cereals apply Caramba 90 in 200 to 300 l/ha water.

In oilseed rape and legumes apply Caramba 90 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, in accordance to guidance provided by the sprayer and/or nozzle manufacture.

Sprayers should be thoroughly cleaned out immediately after use.

Qualified approval

Caramba 90 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.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Rate</th>
<th>Minimum water volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter wheat, Spring wheat, Durum</td>
<td>1.0 litres per</td>
<td>110 litres per</td>
</tr>
<tr>
<td>barley, Spring barley, Triticale,</td>
<td>hectare</td>
<td>hectare</td>
</tr>
<tr>
<td>Rye</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oilseed rape, Peas, Beans, Lupins</td>
<td>0.8 litres per</td>
<td>90 litres per</td>
</tr>
<tr>
<td></td>
<td>hectare</td>
<td>hectare</td>
</tr>
</tbody>
</table>

The following does not form part of the product label under the Plant Protection Products Regulations.

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.
Section 6 of the Health and Safety at Work Act
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 the Control of Pesticides 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

Product identifier

CARAMBA 90

Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: crop protection product, fungicide

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Contact address:
BASF plc
PO Box 4, Earl Road, Cheadle Hulme, Cheadle, Cheshire
SK8 6QG, UNITED KINGDOM

Telephone: +44 161 485-6222
E-mail address: product-safety-north@basf.com

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

2. Hazards Identification

Label elements

According to Regulation (EC) No 1272/2008 [CLP]
Globally Harmonized System, EU (GHS)

Pictogram:
Signal Word: Warning

Hazard Statement:
H319 Causes serious eye irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H361d Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.
Precautionary Statements (Prevention):
P260d Do not breathe vapours.
P201 Obtain special instructions before use.
P280e Wear protective gloves/clothing.
P264 Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P391 Collect spillage.

Hazard determining component(s) for labelling: METCONAZOLE, Alkyl polyoxyethene glycol ether, DIETHYLENE GLYCOL

According to Directive 67/548/EEC or 1999/45/EC
Classification/labelling in accordance with UK regulations.

Hazard symbol(s)
Xn Harmful.
N Dangerous for the environment.

R-phrase(s)
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.

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.
S35 This material and its container must be disposed of in a safe way.
S36/37 Wear suitable protective clothing and gloves.
S46 If swallowed, seek medical advice immediately and show this container or label.
S57 Use appropriate container to avoid environmental contamination.

Hazard determining component(s) for labelling: METCONAZOLE, Alkyl polyoxyethene glycol ether, DIETHYLENE GLYCOL

Classification of the substance or mixture
According to Regulation (EC) No 1272/2008 [CLP]
Eye Dam./Irrit. 2
Repr. 2 (unborn child)
STOT RE 2
Aquatic Chronic 2
According to Directive 67/548/EEC or 1999/45/EC
Repr. Cat. 3

Possible Hazards: Irritating to eyes. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of harm to the unborn child.

For the classifications not written out in full in this section the full text can be found in section 16.
**Other hazards**
According to Regulation (EC) No 1272/2008 [CLP]

Other Hazards (GHS): 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.

### 3. Composition/Information on Ingredients

#### Mixtures

**Chemical nature**
crop protection product, fungicide, Emulsifiable concentrate (EC)

**Hazardous ingredients (GHS)**
according to Regulation (EC) No. 1272/2008

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Content (W/W)</th>
<th>Acute Toxicity (oral)</th>
<th>Repr. Category</th>
<th>CAS Number</th>
<th>Hazard symbol(s)</th>
<th>R-phrase(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metconazole</td>
<td>8.6 %</td>
<td>4</td>
<td>2 (unborn child)</td>
<td>125116-23-6</td>
<td>Xn, N</td>
<td>22, 63, 51/53, 53</td>
</tr>
<tr>
<td>Alkyl polyoxyethene glycol ether</td>
<td>&lt; 60 %</td>
<td>4</td>
<td>2</td>
<td>68439-45-2</td>
<td>Xn</td>
<td>22, 41</td>
</tr>
<tr>
<td>2,2'-oxybisethanol; diethylene glycol</td>
<td>&lt; 40 %</td>
<td>4</td>
<td>2</td>
<td>111-46-6</td>
<td>Xn</td>
<td>22</td>
</tr>
</tbody>
</table>

**Hazardous ingredients**
according to Directive 1999/45/EC

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Content (W/W)</th>
<th>Acute Toxicity (oral)</th>
<th>Repr. Category</th>
<th>CAS Number</th>
<th>Hazard symbol(s)</th>
<th>R-phrase(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metconazole</td>
<td>8.6 %</td>
<td>4</td>
<td>2 (unborn child)</td>
<td>125116-23-6</td>
<td>Xn, N</td>
<td>22, 63, 51/53, 53</td>
</tr>
<tr>
<td>Alkyl polyoxyethene glycol ether</td>
<td>&lt; 60 %</td>
<td>2</td>
<td>2</td>
<td>68439-45-2</td>
<td>Xn</td>
<td>22, 41</td>
</tr>
<tr>
<td>2,2'-oxybisethanol; diethylene glycol</td>
<td>&lt; 40 %</td>
<td>2</td>
<td>2</td>
<td>111-46-6</td>
<td>Xn</td>
<td>22</td>
</tr>
</tbody>
</table>
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.

4. **First-Aid Measures**

   **Description of first aid measures**
   Show container, label and/or safety data sheet to physician.
   Remove contaminated clothing.
   If inhaled: Keep patient calm, remove to fresh air, seek medical attention.
   On skin contact: Wash thoroughly with soap and water.
   On contact with eyes: 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.

   **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.

   **Indication of any immediate medical attention and special treatment needed**
   Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. **Fire-Fighting Measures**

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

   **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.

   **Advice for fire-fighters**
   Special protective equipment: Wear self-contained breathing apparatus and chemical-protective clothing.
   Further information: 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. In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire.

6. **Accidental Release Measures**

   **Personal precautions, protective equipment and emergency procedures**
   Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.

   **Environmental precautions**
   Do not allow contamination of public drains or surface or ground waters. Inform local water plc if spillage enters drains and the Environment Agency (England & Wales), the Scottish Environmental Protection Agency (Scotland), or the Environment and Heritage Service (Northern Ireland) if it enters surface or ground waters. Keep people and animals away.

   **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.
7. Handling and Storage

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.

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.

Protect from temperatures below: 2 °C
The product crystallizes below the limit temperature.

Protect from temperatures above: 30 °C
Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

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.

8. Exposure Controls/Personal Protection

Control parameters
Components with workplace control parameters
111-46-6: Diethylene glycol
TWA value 101 mg/m3 ; 23 ppm (EH40 (UK))

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: Safety glasses with side-shields (frame 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.
9. Physical and Chemical Properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form:</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour:</td>
<td>off-white</td>
</tr>
<tr>
<td>Odour:</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odour threshold:</td>
<td>not determined</td>
</tr>
<tr>
<td>pH value:</td>
<td>approx. 4.5 - 6.5 (pH Meter)</td>
</tr>
<tr>
<td>Melting point:</td>
<td>approx. -6.5 °C</td>
</tr>
<tr>
<td>Boiling point:</td>
<td>approx. 244.9 °C (1,013 hPa)</td>
</tr>
<tr>
<td>Flash point:</td>
<td>&gt; 80 °C</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Flammability:</td>
<td>not highly flammable</td>
</tr>
<tr>
<td>Lower explosion limit:</td>
<td>not determined</td>
</tr>
<tr>
<td>Upper explosion limit:</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour pressure:</td>
<td>approx. 0.008 hPa (25 °C)</td>
</tr>
<tr>
<td>Density:</td>
<td>approx. 1.05 g/cm³ (20 °C)</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>not determined</td>
</tr>
<tr>
<td>Solubility in water:</td>
<td>emulsifiable</td>
</tr>
<tr>
<td>Partitioning coefficient</td>
<td>not applicable</td>
</tr>
<tr>
<td>n-octanol/water (log Kow):</td>
<td>not applicable</td>
</tr>
<tr>
<td>Self ignition:</td>
<td>Temperature: 349 °C</td>
</tr>
<tr>
<td>Viscosity, dynamic:</td>
<td>approx. 28 mPa.s (40 °C)</td>
</tr>
<tr>
<td>Explosion hazard:</td>
<td>Based on the chemical structure there is no indicating of explosive properties.</td>
</tr>
<tr>
<td>Fire promoting properties:</td>
<td>not fire-propagating</td>
</tr>
</tbody>
</table>

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

10. Stability and Reactivity

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

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

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

Conditions to avoid
See MSDS section 7 - Handling and storage.

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

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

11. Toxicological Information

Information on toxicological effects

Acute toxicity
Assessment of acute toxicity: Of low toxicity after single ingestion. Virtually nontoxic after a single skin
contact. Virtually nontoxic by inhalation.
Experimental/calculated data:
LD50 rat (oral): 2,102 mg/kg (OECD Guideline 401)
LC50 rat (by inhalation): > 9.57 mg/l 4 h (calculated)
The product has not been tested. The statement has been derived from products of a similar structure or composition.
LD50 rat (dermal): > 4,000 mg/kg (OECD Guideline 402)

Irritation
Assessment of irritating effects: Eye contact causes irritation. Not irritating to the skin.
Experimental/calculated data: Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)
Serious eye damage/irritation: Irritant.

Respiratory/Skin sensitization
Assessment of sensitization: There is no evidence of a skin-sensitizing potential.
Experimental/calculated data: Buehler test guinea pig: Skin sensitizing effects were not observed in animal studies. (OECD Guideline 406)

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.

Information on: Metconazole
Assessment of carcinogenicity:
In long-term studies in rodents exposed to high doses, a tumorigenic effect was found; however, these results are thought to be due to a rodent-specific liver effect that is not relevant to humans.

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
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
Assessment of repeated dose toxicity:
Adaptive effects were observed after repeated exposure in animal studies.

Information on: Diethylene glycol
Assessment of repeated dose toxicity:
The substance may cause damage to the kidney after repeated ingestion.

Other relevant toxicity information
Misuse can be harmful to health.
12. **Ecological Information**

**Toxicity**
Assessment of aquatic toxicity:
Acutely toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Toxicity to fish:
LC50 (96 h) 10 mg/l, Oncorhynchus mykiss (OECD 203; ISO 7346; 92/69/EEC, C.1, static)
Aquatic invertebrates:
EC50 (48 h) 9.28 mg/l, Daphnia magna (Directive 92/69/EEC, C.2, static)
Aquatic plants:
EC50 (72 h) 3.94 mg/l, Selenastrum capricornutum (Guideline 92/69/EEC, C.3)

**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*
Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria).

**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*
Bioaccumulation potential: Bioconcentration factor: 51 - 80, Lepomis macrochirus
Does not accumulate in organisms.
*Information on: Alkyl polyoxyethene glycol ether*
Bioaccumulation potential: No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).
*Information on: Diethylene glycol*
Bioaccumulation potential: Bioconcentration factor: 100 (3 d), Leuciscus idus (measured) Does not significantly accumulate in organisms.

**Mobility in soil (and other compartments if available)**
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*
Assessment transport between environmental compartments: Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.
*Information on: Diethylene glycol*
Assessment transport between environmental compartments: The substance will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected.

**Results of PBT and vPvB assessment**
The product does not contain a substance fullfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

**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.

**Additional information**
Other ecotoxicological advice: Do not discharge product into the environment without control.
13. Disposal Considerations

Waste treatment methods
Must be sent to a suitable incineration plant, observing local regulations.
The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted
(United Kingdom). This product and any uncleaned containers must be disposed of as hazardous waste
in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom)
Contaminated packaging: Contaminated packaging should be emptied as far as possible and disposed
of in the same manner as the substance/product.

14. Transport Information

Land transport
ADR
Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains METCONAZOLE)

RID
Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains METCONAZOLE)

Inland waterway transport
ADN
Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains METCONAZOLE)

Sea transport
IMDG
Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Marine pollutant: YES
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains METCONAZOLE)

Air transport
IATA/ICAO
Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains METCONAZOLE)
Further information
This product is subject to the most recent edition of 'The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations' and their amendments (United Kingdom).

15. Regulatory Information

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

To avoid risks to man and the environment, comply with the instructions for use. The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, ‘COSHH Essentials’ (United Kingdom). This product is classified under the Chemicals (Hazard Information and Packaging) Regulations, (CHIP) (United Kingdom). This product may be subject to the Control of Major Accident Hazards Regulations (COMAH), and amendments if specific threshold tonnages are exceeded (United Kingdom).

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

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.
41 Risk of serious damage to eyes.
Eye Dam./Irrit. Serious eye damage/eye irritation
Repr. Reproductive toxicity
STOT RE Specific target organ toxicity — repeated exposure
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.
H318 Causes serious eye damage.
H373 May cause damage to organs through prolonged or repeated exposure.

If you have any queries relating to this MSDS, its contents or any other product safety related questions, please write to the following e-mail address: product-safety-north@basf.com

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.

(Version: 3.0)