



 **BASF**

The Chemical Company

Brutus®



MAPP 14353

An emulsifiable concentrate containing 37.5 g/l epoxiconazole and 27.5 g/l metconazole. A fungicide for use in winter and spring wheat, durum wheat, winter and spring barley, rye and triticale

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

5 litres e

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 CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling the concentrate or 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.

WASH HANDS AND EXPOSED SKIN before meals and after work.

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 to surface water bodies in line with LERAP requirement.

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 m of the top of the bank of a static or flowing water body, unless a Local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1m of the top of a ditch which is dry at the time of application. Aim spray away from water.

This product qualifies for inclusion within the Local Environment 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 PSD'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 FEEDING STUFFS

KEEP OUT OF REACH OF CHILDREN

DO NOT RE-USE CONTAINER for any purpose

STORE IN ORIGINAL CONTAINER tightly closed, in a safe place

On emptying the container, **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.

This label is compliant with the CPA Voluntary Initiative Guidance

® = Registered trademark of BASF

UN 3082
Packing group III
Environmentally hazardous
substance, liquid, N.O.S.,
(contains epoxiconazole
and metconazole)
Marine pollutant

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)



81071794GB1112





HARMFUL



**DANGEROUS FOR
THE ENVIRONMENT**

Brutus®

An emulsifiable concentrate containing
37.5 g/l epoxiconazole and 27.5 g/litre metconazole.

**LIMITED EVIDENCE OF A CARCINOGENIC EFFECT
MAY CAUSE SENSITISATION BY SKIN CONTACT
VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE
LONG TERM ADVERSE EFFECTS IN THE AQUATIC
ENVIRONMENT**

KEEP OUT OF THE REACH OF CHILDREN.
KEEP AWAY FROM FOOD, DRINK AND ANIMAL
FEEDING STUFFS.

WHEN USING DO NOT EAT, DRINK OR SMOKE.
DO NOT EMPTY INTO DRAINS; THIS MATERIAL AND
ITS CONTAINER MUST BE DISPOSED OF IN A SAFE
WAY.

WEAR SUITABLE PROTECTIVE CLOTHING AND
GLOVES.

IF SWALLOWED SEEK MEDICAL ADVICE
IMMEDIATELY AND SHOW THIS CONTAINER OR
LABEL.

USE APPROPRIATE CONTAINMENT TO AVOID
ENVIRONMENTAL CONTAMINATION.

**To avoid risks to man 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, as directed below:

Crops	Maximum individual dose	Maximum total dose	Latest time of application
Wheat (winter), Wheat (spring), Wheat (durum), Rye, Triticale	3.0 litres product per hectare	6.0 litres product per hectare	GS 69 (end of flowering)
Barley (winter) Barley (spring)	3.0 litres product per hectare	6.0 litres product per hectare	GS 59 (end of ear emergence)

**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.

BRUTUS is a broad spectrum systemic fungicide with protectant and curative properties for use in winter and spring wheat, durum wheat, winter and spring barley, rye and triticale.

1. Restrictions/Warnings

This product may cause damage to broad-leaved plant species.

Avoid spray drift onto neighbouring crops.

Wash equipment thoroughly after use.

When applied to barley intended for malting, refer to the latest timing restrictions for epoxiconazole given by the British Beer and Pub Association.

2. Disease Control

BRUTUS is a systemic fungicide with protectant and curative properties for the control of a range of diseases in winter and spring wheat, durum wheat, winter and spring barley, rye and triticale as summarised below:

Brutus offers prolonged persistence of disease control leading to increased yield.

2.1 Disease susceptibility

	Winter wheat	Spring wheat	Winter barley	Spring barley	Durum wheat	Rye	Triticale
Powdery mildew	MC	MC	MC	MC	MC	MC	MC
<i>Septoria tritici</i>	C	C	-	-	C	-	C
<i>Septoria nodorum</i>	C	C	-	-	C	-	C
Yellow rust	C	C	C	C	C	C	C
Brown rust	C	C	C	C	C	C	C
Tan spot	MC	MC	-	-	MC	-	-
Net blotch	-	-	C	C	-	-	-
<i>Rhynchosporium</i>	-	-	C	C	-	MC	-
<i>Ramularia</i>	-	-	MC	MC	-	-	-
Eyespot	R	-	R	-	R	R	R
<i>Fusarium</i> ear blight (1)	MC#	MC#	-	-	MC#	-	MC#
Sooty moulds (<i>Cladosporium</i> , <i>Botrytis</i>)	MC	MC	-	-	MC	-	-

(1) Application of BRUTUS to ears of wheat and triticale can lead to reduction of the levels





of the mycotoxin deoxynivalenol (DON) associated with Fusarium ear blight infection, but this level of effect may not necessarily lead to reduction of DON below the statutory limit in wheat and triticale grain.

When applied at 3 litres per hectare BRUTUS will achieve Moderate Control of Fusarium ear blight. BRUTUS can also be used at 2 litres per hectare for Good Reduction of this disease.

C = Control
MC = Moderate control
R = Reduction

2.2 Resistance management

Strains of certain diseases with decreased sensitivity to triazole fungicides are known to exist in the UK. Where these occur or develop, BRUTUS may not give satisfactory control.

BRUTUS contains the DMI fungicides epoxiconazole and metconazole. 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 with DMIs contact your agronomist or specialist advisor, and visit the FRAG-UK website.

A strategy for managing resistance should be adopted. Guidelines have been produced by the Fungicide Resistance Action Committee (FRAC) and copies are available from HGCA, CPA, your distributor, crop adviser or product manufacturer.

3. Crop specific information

3.1 Crops

BRUTUS may be used on all varieties of winter and spring wheat, durum wheat, winter and spring barley, rye and triticale.

3.2 Time of application

Apply BRUTUS at the start of disease attack. Applications in wheat, rye and triticale can be made up to the end of flowering (GS 69). Applications in barley can be made up to the end of ear emergence (GS 59).

For optimum effect against eyespot with BRUTUS apply between the leaf sheaths erect and second node detectable stages of the crop.

For protection against Fusarium ear blight and sooty moulds on the ears of winter and spring wheat, durum wheat and triticale, apply BRUTUS during ear emergence.

3.3 Rate of application

Apply 3 litres of BRUTUS in 150 to 300 litres of water per hectare.

Brutus may be applied at 3 litres per hectare in 100 litres water per hectare although efficacy at this reduced volume has not been evaluated. Therefore application at 100 litres water per hectare is at user's risk with regard to biological efficacy.

When applied at 3 litres per hectare BRUTUS will achieve Moderate Control of Fusarium ear blight. BRUTUS can also be used at 2 litres per hectare for Good Reduction of this disease.





4. Following crops

After treating a cereal crop with Brutus, oilseed rape, cereals, sugar beet, linseed, maize, clover, beans, peas, carrots, potatoes, lettuce, cabbage, sunflower, ryegrass and onions may be sown as the following crop. The effect of Brutus on other crops has not been assessed.

5. Mixing and Spraying

5.1 Mixing

Never prepare more spray solution than is required.

Fill the tank half full 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 BRUTUS to the spray tank while re-circulating. Fill up the tank with water and continue agitation until spraying is completed.

When tank mixes are to be used, take due note of any instructions given as to the order of mixing. Each product should be added separately to the spray tank and fully dispersed before the addition of any further product(s). All tank mixes should be used immediately after mixing.

On emptying the container, 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.

5.2 Application

Apply as a MEDIUM spray as defined by BCPC

5.3 Sprayer cleaning

After spraying, thoroughly clean and flush out application machinery with a minimum of three rinses.

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

BRUTUS

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

Globally Harmonized System, EU (GHS)

Pictogram:

Signal Word: Warning

Hazard Statement:

H317

H351

H361fd

H400

H410

May cause an allergic skin reaction.

Suspected of causing cancer.

Suspected of damaging fertility. Suspected of damaging the unborn child.

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.





Precautionary Statements (Prevention):

P272 Contaminated work clothing should not be allowed out of the workplace.
P280e Wear protective gloves/clothing.
P201 Obtain special instructions before use.
P261d Avoid breathing vapours.

Precautionary Statements (Response):

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.

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

Hazard determining component(s) for labelling: EPOXICONAZOLE, METCONAZOLE, 2-ethylhexyl-lactate

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-phrases(s)

R40 Limited evidence of a carcinogenic effect.
R43 May cause sensitization by skin contact.
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-phrases(s)

S2 Keep out of the reach of children.
S2 Keep away from food, drink and animal feeding stuffs.
S20/21 When using do not eat, drink or smoke.
S24 Avoid contact with skin.
S36/37 Wear suitable protective clothing and gloves.
S46 If swallowed, seek medical advice immediately and show this container or label.

Hazard determining component(s) for labelling: EPOXICONAZOLE, METCONAZOLE, 2-ethylhexyl-lactate

Classification of the substance or mixture

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

Skin Sens. 1

Carc. 2

Repr. 2 (fertility)

Repr. 2 (unborn child) Aquatic Acute 1

Aquatic Chronic 1

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

Carc. Cat. 3

Possible Hazards:

Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.
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]

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

Epoiconazole

Content (W/W): 3.7 %
CAS Number: 133855-98-8
EC-Number: 406-850-2
REACH registration number:
01-0000015634-70
INDEX-Number: 613-175-00-9

Carc. 2
Repr. 2 (fertility)
Repr. 2 (unborn child)
Aquatic Chronic 2
H411, H351, H361fd

Metconazole

Content (W/W): 2.7 %
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

2-ethylhexyl-lactate

Content (W/W): < 40 %
CAS Number: 186817-80-1

Skin Corr./Irrit. 2
Skin Sens. 1
Eye Dam./Irrit. 2
H319, H315, H317

fatty alcohol alkoxylate (polymer; Starting materials listed in EINECS)

Content (W/W): < 30 %

Eye Dam./Irrit. 2
H319

Benzyl alcohol

Content (W/W): < 22 %
CAS Number: 100-51-6
EC-Number: 202-859-9
REACH registration number:
01-2119492630-38
INDEX-Number: 603-057-00-5

Acute Tox. 4 (oral)
Acute Tox. 4 (Inhalation - mist)
H332, H302

Polyarylphenol ethoxylate

Content (W/W): < 10 %
CAS Number: 99734-09-5

Aquatic Chronic 3
Aquatic Acute 3
H402, H412





calcium bis(tetrapropylenebenzenesulphonate)

Content (W/W): < 5 %
CAS Number: 11117-11-6

Acute Tox. 4 (dermal)
Skin Corr./Irrit. 2
Eye Dam./Irrit. 1
Aquatic Chronic 3
H318, H315, H312, H412

solvent naphtha

Content (W/W): < 5 %
CAS Number: 64742-94-5
EC-Number: 265-198-5
REACH registration number:
01-2119451097-39
INDEX-Number: 649-424-00-3

Asp. Tox. 1
STOT SE 3 (drowsiness and
dizziness)
Aquatic Chronic 2
H411, H304, H336

Fatty alcohol polyglycoether

Content (W/W): < 5 %

Acute Tox. 4 (oral)
Eye Dam./Irrit. 1
Aquatic Chronic 2
H318, H302, H411

naphthalene

Content (W/W): < 0.05 %
CAS Number: 91-20-3
EC-Number: 202-049-5
INDEX-Number: 601-052-00-2

Acute Tox. 4 (oral)
Carc. 2
Aquatic Acute 1
Aquatic Chronic 1
M-factor acute: 1
M-factor chronic: 1
H302, H400, H410, H351

Hazardous ingredients

according to Directive 1999/45/EC

Epoxiconazole

Content (W/W): 3.7 %
CAS Number: 133855-98-8
EC-Number: 406-850-2
REACH registration number: 01-0000015634-70
INDEX-Number: 613-175-00-9
Hazard symbol(s): Xn, N
R-phrases(s): 40, 62, 63, 51/53
Carc. Cat. 3
Repr. Cat. 3

Metconazole

Content (W/W): 2.7 %
CAS Number: 125116-23-6
INDEX-Number: 613-284-00-1
Hazard symbol(s): Xn, N
R-phrases(s): 22, 63, 51/53
Repr. Cat. 3

2-ethylhexyl-lactate

Content (W/W): < 40 %
CAS Number: 186817-80-1
EC-Number: 228-503-2
Hazard symbol(s): Xi
R-phrases(s): 36/38, 43





fatty alcohol alkoxylate (polymer; Starting materials listed in EINECS)

Content (W/W): < 30 %
Hazard symbol(s): Xi
R-pharse(s): 36/38

Benzyl alcohol

Content (W/W): < 22 %
CAS Number: 100-51-6
EC-Number: 202-859-9
REACH registration number: 01-2119492630-38
INDEX-Number: 603-057-00-5
Hazard symbol(s): Xn
R-pharse(s): 20/22

Polyaryphenol ethoxylate

Content (W/W): < 10 %
CAS Number: 99734-09-5
R-pharse(s): 52/53

calcium bis(tetrapropylenebenzenesulphonate)

Content (W/W): < 5 %
CAS Number: 11117-11-6
Hazard symbol(s): Xn
R-pharse(s): 21, 38, 41, 52/53

solvent naphtha

Content (W/W): < 5 %
CAS Number: 64742-94-5
EC-Number: 265-198-5
REACH registration number: 01-2119451097-39
INDEX-Number: 649-424-00-3
Hazard symbol(s): Xn, N
R-pharse(s): 65, 66, 67, 51/53

Fatty alcohol polyglycoether

Content (W/W): < 5 %
Hazard symbol(s): Xn, N
R-pharse(s): 22, 41, 51/53

naphthalene

Content (W/W): < 0.05 %
CAS Number: 91-20-3
EC-Number: 202-049-5
INDEX-Number: 601-052-00-2
Hazard symbol(s): Xn, N
R-pharse(s): 22, 40, 50/53
Carc. Cat. 3

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.

On ingestion: Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

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, carbon dioxide, foam, dry powder

Special hazards arising from the substance or mixture

carbon monoxide, Carbon dioxide, hydrogen chloride, hydrogen fluoride, 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:

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.

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, kieselsguhr).





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.

Reference to other sections

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

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

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: 0 °C

The product crystallizes below the limit temperature. Protect from temperatures above: 40 °C

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

none

For normal use and handling refer to the product label/leaflet. In all other cases the following apply.

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

Form:	liquid	
Colour:	yellow, clear	
Odour:	spicy	
Odour threshold:	not determined	
pH value:	approx. 4 - 6 (water, 1 %(m), 20 °C)	(pH Meter)
crystallization temperature:	-10 °C	(measured)
Boiling point:	approx. 205 °C (1,013 hPa)	
	Information applies to the solvent.	
Flash point:	101 °C	(Directive 92/69/EEC, A.9)
Evaporation rate:	not applicable	
Flammability:	not highly flammable	(Directive 92/69/EEC, A.12)
Lower explosion limit:	not determined	
Upper explosion limit:	not determined	
Vapour pressure:	approx. 0.13 hPa (25 °C)	
	Information applies to the solvent.	
Density:	approx. 1.00 g/cm ³ (20 °C)	
Relative vapour density (air):	not determined	
Solubility in water:	emulsifiable	
Partitioning coefficient n-octanol/water (log Kow):	not applicable	
Self ignition:	Temperature: 282 °C Pressure: 992 - 1,009 hPa	(Method: Directive 92/69/EEC, A.15)
Thermal decomposition:	265 °C, 230 kJ/kg (DSC (OECD 113))	
Viscosity, dynamic:	approx. 27 mPa.s (20 °C, 100 1/s)	(OECD 114)
	approx. 12 mPa.s (40 °C, 100 1/s)	(OECD 114)
Explosion hazard:	not explosive	
Fire promoting properties:	not fire-propagating	(Directive 2004/73/EC, A.21)

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 oxidizing agents, strong bases, strong acids

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:
Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation.

Experimental/calculated data:
LD50 rat (oral): > 2,000 mg/kg
LC50 rat (by inhalation): 5.45 mg/l
LD50 rat (dermal): > 5,000 mg/kg

Irritation

Assessment of irritating effects: Not irritating to the eyes. Not irritating to the skin.

Experimental/calculated data: Skin corrosion/irritation rabbit: non-irritant

Serious eye damage/irritation rabbit: non-irritant

Respiratory/Skin sensitization

Assessment of sensitization: Sensitization after skin contact possible.

Experimental/calculated data: Buehler test mouse: Caused skin sensitization in animal studies. (OECD Guideline 429)

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: Epoxiconazole

*Assessment of carcinogenicity:
Indication of possible carcinogenic effect in animal tests.*

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.

Information on: Epoxiconazole

Assessment of reproduction toxicity:

The results of animal studies suggest 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: Epoxiconazole

Assessment of teratogenicity:

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

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: Epoxiconazole

Assessment of repeated dose toxicity:

Repeated exposure to large quantities may affect certain organs.

Information on: Metconazole

Assessment of repeated dose toxicity:

Adaptive effects were observed after repeated exposure in animal studies.

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) 7.1 mg/l, *Oncorhynchus mykiss* (OECD 203; ISO 7346; 92/69/EEC, C.1)

Aquatic invertebrates:

EC50 (48 h) 9.89 mg/l, *Daphnia magna* (OECD Guideline 202, part 1, static)

Aquatic plants:

EC50 (72 h) 12.5 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201)

EC50 (7 d) 0.822 mg/l (growth rate), *Lemna gibba* (OECD guideline 221, static)

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

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: Epoxiconazole
Bioaccumulation potential:
Bioconcentration factor: 59 - 70, Oncorhynchus mykiss (OECD-Guideline 305) Does not accumulate in organisms.

Information on: Metconazole
Bioaccumulation potential:
Bioconcentration factor: 51 - 80, Lepomis macrochirus
Does not 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: Epoxiconazole
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: Metconazole
Assessment transport between environmental compartments:
Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

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.

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 disposed of or incinerated in accordance with 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 EPOXICONAZOLE, 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 EPOXICONAZOLE, 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 EPOXICONAZOLE, 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 EPOXICONAZOLE, 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 EPOXICONAZOLE, 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.
Xi	Irritant.
40	Limited evidence of a carcinogenic effect.
62	Possible risk of impaired fertility.
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.
22	Harmful if swallowed.
36/38	Irritating to eyes and skin.
43	May cause sensitization by skin contact.
20/22	Harmful by inhalation and if swallowed.
52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
21	Harmful in contact with skin.
38	Irritating to skin.
41	Risk of serious damage to eyes.
65	Harmful: may cause lung damage if swallowed.
66	Repeated exposure may cause skin dryness or cracking.
67	Vapours may cause drowsiness and dizziness.
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Skin Sens.	Skin sensitization
Carc.	Carcinogenicity
Repr.	Reproductive toxicity
Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Acute Tox.	Acute toxicity
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation





Asp.Tox. Aspiration hazard
STOT SE Specific target organ toxicity — single exposure

Carc. Cat. 3 Carcinogenic substances Category 3: Substances which cause concern for man owing to possible carcinogenic effects.

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.

H411 Toxic to aquatic life with long lasting effects.

H351 Suspected of causing cancer.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

H302 Harmful if swallowed.

H361d Suspected of damaging the unborn child.

H319 Causes serious eye irritation.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H402 Harmful to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

H318 Causes serious eye damage.

H312 Harmful in contact with skin.

H304 May be fatal if swallowed and enters airways.

H336 May cause drowsiness or dizziness.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Date of print 23.12.2011

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.

V5.0





 **BASF**

The Chemical Company

Brutus®



MAPP 14353

An emulsifiable concentrate containing 37.5 g/l epoxiconazole and 27.5 g/l metconazole. A fungicide for use in winter and spring wheat, durum wheat, winter and spring barley, rye and triticale

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

5 litres e

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 CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling the concentrate or 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.

WASH HANDS AND EXPOSED SKIN before meals and after work.

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 to surface water bodies in line with LERAP requirement.

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 m of the top of the bank of a static or flowing water body, unless a Local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1m of the top of a ditch which is dry at the time of application. Aim spray away from water.

This product qualifies for inclusion within the Local Environment 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 PSD'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 FEEDING STUFFS

KEEP OUT OF REACH OF CHILDREN

DO NOT RE-USE CONTAINER for any purpose

STORE IN ORIGINAL CONTAINER tightly closed, in a safe place

On emptying the container, **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.

This label is compliant with the CPA Voluntary Initiative Guidance

® = Registered trademark of BASF

UN 3082
Packing group III
Environmentally hazardous
substance, liquid, N.O.S.,
(contains epoxiconazole
and metconazole)
Marine pollutant

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)



**The
Voluntary
Initiative**

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