

Capalo®

A suspo-emulsion formulation containing 75 g/litre metrafenone, 62.5 g/litre epoxiconazole plus 200 g/litre fenpropimorph for use in wheat, barley, oats, rye and triticale.

Danger:

Causes skin irritation.

May cause an allergic skin reaction.

Causes serious eye irritation.

Suspected of causing cancer.

May damage the unborn child.

Suspected of damaging fertility.

Very toxic to aquatic life with long lasting effects.

Wear protective gloves/clothing/eye protection.

Avoid breathing mist.

IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If exposed or concerned: call a poison centre or doctor/physician.

Store locked up.

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

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

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UN 3082

Packing Group III

**Environmentally hazardous
substance, liquid, N.O.S. (contains
fenpropimorph 19%, epoxiconazole
6%, metrafenone 7%)**

Marine pollutant



PCS No. 02718

Supplied by:

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Emergency Information

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Authorization holder:

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Earl Road, Cheadle Hulme,
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BASF
We create Chemistry

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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.

WEAR SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.

WASH CONCENTRATE from skin or eyes immediately

WASH HANDS AND EXPOSED SKIN before meals and after work.

AVOID ALL CONTACT WITH SKIN OR EYES.

DO NOT BREATHE SPRAY.

IF YOU FEEL UNWELL, seek medical advice (show 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).

Storage and disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.

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 safely.

DO NOT RE-USE CONTAINER for any purpose.

Store in a suitable pesticide store, keep dry and protect from frost.

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

FOR USE ONLY AS AN AGRICULTURAL FUNGICIDE

Crops/situations: wheat, barley, oats, rye and triticale.

Maximum individual dose: 2.0 litres/ha

Maximum number of treatments: 2 per crop

Latest time of application: up to and including the beginning of flowering (GS61) in wheat, rye and triticale and up to and including emergence of ear just complete (GS59) in barley and oats.

Other specific restrictions: Do not apply more than two applications of any products containing metrafenone to any one crop.

READ ALL OTHER SAFETY PRECAUTIONS AND DIRECTIONS FOR USE BEFORE USE

PCS No. 02718

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.

Capalo is a fungicide with protectant, curative and eradicant properties for the control of a range of diseases on wheat, barley, oats, rye and triticale.

1. Restrictions/Warnings

For professional use only.

Avoid spray drift onto neighbouring crops.

Capalo may cause damage to broad-leaved plant species.

Wash equipment thoroughly after use.

Consult processor before use.

2. Disease Control

2.1 Disease susceptibility

Capalo is a systemic fungicide with protectant, curative and eradicant properties for the control of a range of diseases in wheat, barley, oats, rye and triticale as shown in the table below.

	Winter wheat	Spring wheat	Winter barley	Spring barley	Winter oats	Spring oats	Rye	Triticale
Powdery mildew (1)	C (2)	C	C	C	C	C	C	C
<i>Septoria tritici</i>	C	C						C
<i>Septoria nodorum</i>	C	C						C
Yellow rust	C	C	C	C			C	C
Brown rust	C	C	C	C			C	C
Crown rust					C	C		
<i>Rhynchosporium</i>			C	C			C	
Net blotch			MC	MC				
<i>Fusarium</i> ear blight	GR	GR						
Sooty moulds (<i>Cladosporium</i> ; <i>Botrytis</i>)	GR	GR						
Eyespot	R		R				R	R

- (1) Capalo will give control of mildew and provide knockdown of moderate levels of established mildew present at application.
- (2) In winter wheat, Capalo will also give moderate control of mildew in the latent phase.

C = control

MC = moderate control

GR = good reduction

R = reduction

2.2 Resistance management

Apply Capalo according to the instructions for the target diseases at the specific growth stage indicated. Apply a maximum of two sprays of Capalo per crop.

Capalo should be used as part of a resistance management strategy that includes use in mixtures or sequences that are effective against mildew as well as non-chemical methods e.g. cultural control.

To reduce the risk of resistance development, where mildew is well established at the time of application, Capalo should be used in mix with 350 g/ha fenpropimorph e.g. Corbel (PCS No 90438).

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

3. Crop specific information

3.1 Crops

Capalo can be used on all varieties of wheat, barley, oats, rye and triticale.

3.2 Time of application

Apply Capalo at the start of foliar disease attack. A maximum of two applications can be made up to the beginning of flowering (GS61) in wheat, rye and triticale and up to and including emergence of ear just complete (GS59) in barley and oats.

For optimum effect against eyespot apply between the leaf sheaths erect and second node detectable stages of the crop (GS30-32).

For protection against *Fusarium* ear blight and sooty moulds (*Cladosporium*, *Botrytis*) on the ears of wheat, apply Capalo during ear emergence.

3.3 Rate of application

Apply 2.0 litres Capalo in a minimum of 200 litres of water per hectare.

4. Following crops

After treating a cereal crop with Capalo, cereals, oilseed rape, sugar beet, linseed, maize, clover, field beans, peas, turnips, carrots, cauliflower, onions, lettuce and potatoes can be planted as succeeding crops.

5. Mixing and Application

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 Capalo 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).

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.

6. Trademark Acknowledgements

Capalo is a registered trademark of BASF

The following does not form part of the product label under the UK Plant Protection Products Regulations or the Irish 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 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

CAPALO

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]

Skin Corr./Irrit. 2

Eye Dam./Irrit. 2

Skin Sens. 1

Carc. 2

Repr. 1B

Aquatic Chronic 2

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

Carc. Cat. 3

Repr. Cat. 2

Repr. Cat. 3

Possible Hazards:

Irritating to skin.

May cause sensitization by skin contact.

Limited evidence of a carcinogenic effect.

Possible risk of impaired fertility.

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

2.2. Label elements

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

Pictogram:

Signal Word:

Danger



Hazard Statement:

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H410	Very toxic to aquatic life with long lasting effects.
H360Df	May damage the unborn child. Suspected of damaging fertility.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary Statements (Prevention):

P261	Avoid breathing mist.
P202	Do not handle until all safety precautions have been read and understood.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash contaminated body parts thoroughly after handling.
P280	Wear protective gloves/clothing/eye protection.

Precautionary Statements (Response):

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 + P311	IF EXPOSED or concerned: Call a POISON CENTER or doctor/physician.
P303 + P362	IF ON SKIN (on hair): Wash with plenty of soap and water.
P333 + P313	IF skin irritation or rash occurs: Get medical advice/attention.
P332 + P313	IF skin irritation occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P337 + P311	IF eye irritation persists: Call a POISON CENTER or doctor/physician.

Precautionary Statements (Storage):

P405	Store locked up.
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Precautionary Statements (Disposal):

P501	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.
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Labeling of special preparations (GHS):

May produce an allergic reaction. Contains: 1,2-BENZISOTHIAZOL-3(2H)-ONE

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

Hazard determining component(s) for labelling: FENPROPIMORPH, EPOXICONAZOLE, METRAFENONE

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

Classification/labelling in accordance with Irish regulations.

Hazard symbol(s)

N Dangerous for the environment.
T Toxic.



R-phrases(s)

R38 Irritating to skin.
R43 May cause sensitization by skin contact.
R40 Limited evidence of a carcinogenic effect.
R62 Possible risk of impaired fertility.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R61 May cause harm to the unborn child.

S-phrases(s)

S36/37 Wear suitable protective clothing and gloves.
S2 Keep out of the reach of children.
S13 Keep away from food, drink and animal feeding stuffs.
S46 If swallowed, seek medical advice immediately and show this container or label.
S35 This material and its container must be disposed of in a safe way.
S57 Use appropriate container to avoid environmental contamination.

Hazard determining component(s) for labelling: FENPROPIIMORPH, EPOXICONAZOLE, METRAFENONE

The product contains: 1,2-BENZISOTHAZOL-3(2H)-ONE May produce an allergic reaction.

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, Suspo-emulsion (SE)

Hazardous ingredients (GHS)

according to Regulation (EC) No. 1272/2008

fenpropimorph; cis-4-[3-(p-tert-butylphenyl)-2-methylpropyl]-2,6-dimethylmorpholine

Content (W/W): 19.4 %

CAS Number: 67564-91-4

EC-Number: 266-719-9

INDEX-Number: 613-124-00-0

Acute Tox. 4 (oral)

Skin Corr./Irrit. 2

Repr. 2 (unborn child)

Aquatic Chronic 2

H315, H302, H361d, H411

Metrafenone

Content (W/W): 7.3 %

CAS Number: 220899-03-6

Aquatic Acute 1

Aquatic Chronic 2

H400, H411

Epoxiconazole; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[1H-1,2,4-triazol-1-yl)methyl] oxirane

Content (W/W): 6.1 %
CAS Number: 133855-98-8
EC-Number: 406-850-2
INDEX-Number: 613-175-00-9

Carc. 2
Repr. 2 (fertility)
Repr. 1B (unborn child)
Aquatic Chronic 2
H351, H360Df, H411

Oxirane, methyl-, polymer with oxirane, monoisotridecyl ether, block

Content (W/W): < 15 %
CAS Number: 196823-11-7

Eye Dam./Irrit. 2
H319

1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one

Content (W/W): < 0.05 %
CAS Number: 2634-33-5
EC-Number: 220-120-9
INDEX-Number: 613-088-00-6

Acute Tox. 4 (oral)
Skin Corr./Irrit. 2
Eye Dam./Irrit. 1
Skin Sens. 1
Aquatic Acute 1
H318, H315, H302, H317, H400
Specific concentration limit:
Skin Sens. 1: >= 0.05 %

3-(p-tert-Butylphenyl)-2-methylpropanol

Content (W/W): < 0.5 %
CAS Number: 56107-04-1
EC-Number: 259-996-2

Aquatic Chronic 2
H411

2-(4-tert-Butylbenzyl)propionaldehyde

Content (W/W): < 0.5 %
CAS Number: 80-54-6
EC-Number: 201-289-8
REACH registration number:
01- 2119485965-16

Acute Tox. 4 (oral)
Skin Corr./Irrit. 2
Skin Sens. 1B
Repr. 2 (fertility)
Aquatic Chronic 2
H315, H302, H317, H361f, H411

Soybean oil

Content (W/W): < 10 %
CAS Number: 8001-22-7
EC-Number: 232-274-4

Propane-1,2-diol

Content (W/W): < 5 %
CAS Number: 57-55-6
EC-Number: 200-338-0
REACH registration number:
01- 2119456809-23

Hazardous ingredients

according to Directive 1999/45/EC

fenpropimorph; cis-4-[3-(p-tert-butylphenyl)-2-methylpropyl]-2,6-dimethylmorpholine Content (W/W): 19.4 %

CAS Number: 67564-91-4
EC-Number: 266-719-9
INDEX-Number: 613-124-00-0
Hazard symbol(s): Xn, N
R-phrases(s): 22, 38, 63, 51/53
Repr. Cat. 3

Metrafenone

Content (W/W): 7.3%
CAS Number: 220899-03-6
Hazard symbol(s): N
R-pharse(s): 50/53

Epoxiconazole; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)methyl]oxirane

Content (W/W): 6.1%
CAS Number: 133855-98-8
EC-Number: 406-850-2
INDEX-Number: 613-175-00-9
Hazard symbol(s): T, N
R-pharse(s): 40, 61, 62, 51/53
Carc. Cat. 3
Repr. Cat. 2
Repr. Cat. 3

Oxirane, methyl-, polymer with oxirane, monoisotridecyl ether, block

Content (W/W): < 15%
CAS Number: 196823-11-7
Hazard symbol(s): Xi
R-pharse(s): 36/38

1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one

Content (W/W): < 0.05%
CAS Number: 2634-33-5
EC-Number: 220-120-9
INDEX-Number: 613-088-00-6
Hazard symbol(s): Xn, N
R-pharse(s): 22, 38, 41, 43, 50

3-(p-tert-Butylphenyl)-2-methylpropanol

Content (W/W): < 0.5%
CAS Number: 56107-04-1
EC-Number: 259-996-2
Hazard symbol(s): N, Xi
R-pharse(s): 51/53, 38

2-(4-tert-Butylbenzyl)propionaldehyde

Content (W/W): < 0.5%
CAS Number: 80-54-6
EC-Number: 201-289-3
REACH registration number: 01-2119485965-18
Hazard symbol(s): N, Xi, Xi
R-pharse(s): 22, 38, 43, 62, 51/53

Soybean oil

Content (W/W): < 10%
CAS Number: 8001-22-7
EC-Number: 232-274-4

Propane-1,2-diol

Content (W/W): < 5%
CAS Number: 57-55-6
EC-Number: 200-338-0
REACH registration number: 01-2119456809-23

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

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.

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.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:

water spray, carbon dioxide, foam, dry powder

Unsuitable extinguishing media for safety reasons: water jet

5.2. Special hazards arising from the substance or mixture

carbon monoxide, Carbon dioxide, hydrogen chloride, hydrogen fluoride, hydrogen bromide, nitrogen oxides, sulfur 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 discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

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. Wear suitable protective equipment.

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. Remove contaminated clothing and protective equipment before entering eating areas.

Protection against fire and explosion:

No special precautions necessary. The substance/product is non-combustible. Product is not explosive.

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.

Protect from temperatures below: -5 °C

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

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

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

57-55-6: Propane-1,2-diol

TWA value 470 mg/m³ ; 150 ppm (OEL (IE)), Total vapour and particulates

TWA value 10 mg/m³ (OEL (IE)), Particulate

57-55-6: Propane-1,2-diol

TWA value 470 mg/m³ ; 150 ppm (OEL (IE)), Total vapour and particulates

TWA value 10 mg/m³ (OEL (IE)), Particulate

13855-98-8: Epoxiconazole; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)methyl]oxirane

TWA value 0.3 mg/m³ (Recommendation of BASF), Respirable dust

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.

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Suitable respiratory protection for lower concentrations or short-term effect: Combination filter for gases/vapours of organic, inorganic, acid inorganic, alkaline compounds and toxic particles (e. g. EN 14387 Type ABEK-P3)

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.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	suspension	
Colour:	white	
Odour:	faint odour, sweetish	
Odour threshold:	Not determined due to potential health hazard by inhalation.	
pH value:	approx. 6.5 – 8.5 (20 °C) (measured with the undiluted substance)	(pH Meter)
crystallization temperature:	-2.9 °C	(measured)
Boiling point:	approx. 100 °C	(measured)
Flash point:	Information applies to the solvent. No flash point – Measurement made up to the boiling point.	(Directive 92/69/EEC, A.9)
Evaporation rate:	not applicable	
Flammability:	not highly flammable	(Directive 92/69/EEC, A.12)
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Upper explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Ignition temperature:	405 °C	(Directive 92/69/EEC, A.15)
Vapour pressure:	approx. 23 hPa (20 °C) Information applies to the solvent.	
Density:	approx. 1.03 g/cm ³ (20 °C)	(OECD Guideline 109)
Relative vapour density (air):	not applicable	
Solubility in water:	dispersible	
Partitioning coefficient n-octanol/water (log Kow):	not applicable	

Thermal decomposition: approx. 310 °C, 330 kJ/kg (DSC (OECD 113))
(onset temperature)
Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

Viscosity, dynamic: approx. 148 mPa.s (OECD 114)
(20 °C, 100 1/s)

Explosion hazard: not explosive (Directive 92/69/EEC, A.14)

Fire promoting properties: not fire-propagating (UN Test O.2 (oxidizing liquids))

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:

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

No mortality was observed.

LC50 rat (by inhalation): > 5.3 mg/l 4 h

An aerosol was tested.

LD50 rat (dermal): > 5,000 mg/kg

Irritation

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

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

Serious eye damage/irritation rabbit: Irritant. (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization: Sensitization after skin contact possible.

Experimental/calculated data:

Mouse Local Lymph Node Assay (LLNA) 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: Metrafenone Assessment of carcinogenicity:

When given in high doses, the substance was carcinogenic in animal studies. Based on its mechanism of action, a carcinogenic potential is not expected after exposure to low doses.

Information on: Epoxiconazole; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)methyl]oxirane

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

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; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)methyl]oxirane

Assessment of reproduction toxicity: The results of animal studies suggest a fertility impairing effect.

Information on: 2-(4-tert-Butylbenzyl)propionaldehyde Assessment of reproduction toxicity:

The substance may cause damage to the testes after repeated ingestion, as shown in animal studies.

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: fenpropimorph; cis-4-[3-(p-tert-butylphenyl)-2-methylpropyl]-2,6-dimethylmorpholine
Assessment of teratogenicity: Indications of possible developmental toxicity/teratogenicity were seen in animal studies.

Information on: Epoxiconazole; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)methyl]oxirane

Assessment of teratogenicity: EU-classification The substance caused malformations/developmental toxicity in laboratory animals.

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: fenpropimorph; cis-4-[3-(p-tert-butylphenyl)-2-methylpropyl]-2,6-dimethylmorpholine
Assessment of repeated dose toxicity: Adaptive effects were observed after repeated exposure in animal studies.

Information on: Epoxiconazole; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)methyl]oxirane
Assessment of repeated dose toxicity: Repeated exposure to large quantities may affect certain organs.

Information on: 2-(4-tert-Butylbenzyl)propionaldehyde *Assessment of repeated dose toxicity:*
The substance may cause damage to the liver after repeated ingestion.

Other relevant toxicity information

Misuse can be harmful to health.

SECTION 12: Ecological Information

12.1. 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; 84/449/EEC, C.1, static)

Aquatic invertebrates:

EC50 (48 h) 5.9 mg/l, *Daphnia magna* (OECD Guideline 202, part 1)

Aquatic plants:

EC50 (72 h) 3.75 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201)

EC10 (72 h) 0.30 mg/l (growth rate), *Pseudokirchneriella subcapitata* (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: fenpropimorph; cis-4-[3-(p-tert-butylphenyl)-2-methylpropyl]-2,6-dimethylmorpholine
Assessment biodegradation and elimination (H2O):
Poorly biodegradable.

Information on: Metrafenone

Assessment biodegradation and elimination (H2O):

Not readily biodegradable (by OECD criteria).

Information on: Epoxiconazole; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)methyl]oxirane

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: fenpropimorph; cis-4-[3-(p-tert-butylphenyl)-2-methylpropyl]-2,6-dimethylmorpholine
Bioaccumulation potential:

*Bioconcentration factor: 1,169 – 1,220, *Oncorhynchus mykiss* (OECD-Guideline 305)*

Significant accumulation in organisms is not to be expected.

Information on: Metrafenone *Bioaccumulation potential:*

*Bioconcentration factor: 140 – 180 (42 d), *Lepomis macrochirus* (OECD Guideline 305 E)*

Information on: Epoxiconazole; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)methyl]oxirane
Bioaccumulation potential:
Bioconcentration factor: 59 – 70, Oncorhynchus mykiss (OECD-Guideline 305)
Does not accumulate in organisms.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: fenpropimorph; cis-4-[3-(p-tert-butylphenyl)-2-methylpropyl]-2,6-dimethylmorpholine
Assessment transport between environmental compartments:
Adsorption in soil: Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Information on: Metrafenone
Assessment transport between environmental compartments:
Adsorption in soil: Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Information on: Epoxiconazole; (2RS,3SR)-3-(2-chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)methyl]oxirane
Assessment transport between environmental compartments:
Adsorption in soil: 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 Regulation (EC) 1005/2009 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

UN proper shipping name:

UN3082

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (contains FENPROPIMORPH, EPOXICONAZOLE,
METRAFENONE)

Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: yes
Special precautions for user: Tunnel code: E

RID

UN number: UN3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (contains FENPROPIIMORPH, EPOXICONAZOLE,
METRAFENONE)

Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: yes
Special precautions for user: None known

Inland waterway transport

ADN

UN number: UN3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (contains FENPROPIIMORPH, EPOXICONAZOLE,
METRAFENONE)

Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: yes
Special precautions for user: None known
Transport in inland waterway vessel: Not evaluated

Sea transport

IMDG

UN number: UN 3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (contains FENPROPIIMORPH, EPOXICONAZOLE,
METRAFENONE)

Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: yes
Special precautions for user: Marine pollutant: YES
None known

Air transport

IATA/ICAO

UN number: UN 3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (contains FENPROPIIMORPH, EPOXICONAZOLE,
METRAFENONE)

Transport hazard class(es): 9, EHSM
Packing group: III
Environmental hazards: yes
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**

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 28, 29, 30, 40

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 Poisons 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.
T	Toxic.

Xi	Irritant.
22	Harmful if swallowed.
38	Irritating to skin.
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.
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
40	Limited evidence of a carcinogenic effect.
61	May cause harm to the unborn child.
62	Possible risk of impaired fertility.
36/38	Irritating to eyes and skin.
41	Risk of serious damage to eyes.
43	May cause sensitization by skin contact.
50	Very toxic to aquatic organisms.
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
Skin Sens.	Skin sensitization
Carc.	Carcinogenicity
Repr.	Reproductive toxicity Aquatic
Chronic	Hazardous to the aquatic environment – chronic
Acute Tox.	Acute toxicity
Aquatic Acute	Hazardous to the aquatic environment – acute
Carc. Cat. 3	Carcinogenic substances Category 3: Substances which cause concern for man owing to possible carcinogenic effects.
Repr. Cat. 2	Reprotoxic substances (fertility or development) Category 2: Substances which should be regarded as if they cause developmental toxicity to in humans or substances which should be regarded as if they impair fertility in humans.
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.
H315	Causes skin irritation.
H302	Harmful if swallowed.
H361d	Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.
H400	Very toxic to aquatic life.
H351	Suspected of causing cancer.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H319	Causes serious eye irritation.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H361f	Suspected of damaging fertility.

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)