Lumen®

A protectant and systemic fungicide with curative properties for use in winter wheat, winter barley, spring wheat, spring barley and oats

A suspo-emulsion containing 80 g/litre (7.6% w/w) pyraclostrobin plus 62.5 g/litre (6% w/w) epoxiconazole

Risk and Safety Information
Danger
Harmful if inhaled.
Toxic if swallowed.
May cause an allergic skin reaction.
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.
Use only outdoors or in a well-ventilated area.
Do not breathe mist or vapour.
Immediately call a POISON CENTER 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.

5 L e

UN 3082
Packing Group III
Environmentally hazardous substance, liquid, N.O.S.
(contains epoxiconazole 6%, pyraclostrobin 8%, solvent naphtha)
Marine Pollutant

PCS No. 02702

Supplied by:
BASF Ireland Limited
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Earl Road, Cheadle Hulme,
Cheshire, SK8 6QG, UK

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FOR USE ONLY AS AN AGRICULTURAL FUNGICIDE, as directed below:

Crops	Maximum individual dose	Maximum number of treatments	Latest time of application
Winter and spring wheat	2 litres product per hectare	2 per crop	Before flowering (anthesis) half way (GS 65)
Winter and spring barley Oats	2 litres product per hectare	2 per crop	Not later than emergence of ear just complete (GS 59)

READ ALL OTHER SAFETY PRECAUTIONS & DIRECTIONS FOR USE BEFORE USE

PRECAUTIONS

Operator protection

WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate.
WEAR SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.
AVOID ALL CONTACT WITH SKIN.
WASH HANDS AND EXPOSED SKIN before meals and after work.
WHEN USING DO NOT EAT, DRINK OR SMOKE.
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 clean application equipment near surface water / Avoid contamination via drains from farmyards and roads).
DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5m of the top of the bank of a static or flowing waterbody. Aim spray away from water.
To protect aquatic organisms respect an unsprayed buffer zone of 5m to surface water bodies

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 safely.
DO NOT RE-USE CONTAINER for any purpose.
Store in a suitable pesticide store. Keep dry and protect from frost.

DIRECTIONS FOR USE

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

LUMEN is a fungicide with protectant, systemic and curative properties for use in winter and spring wheat, winter and sprinf barley, and winter and spring oats for disease control as summarised below:

	Winter Wheat	Spring Wheat	Winter Barley	Spring Barley	Winter Oats	Spring Oats
Septoria species (See Note 1)	C	C				
Yellow rust	C	C	C	C		
Brown rust	C	C	C	C		
Crown rust					C	C
Net blotch			C	C		
Rhynchosporium			C	C		
Fusarium ear blight	GR	GR				

C = Control
GR = Good Reduction

NOTE 1: S. species: LUMEN is recommended for control of S. species with curative ability in the latent phase.

Yield response may be obtained in the absence of visual disease.

Time of Application
Apply LUMEN at the start of foliar disease attack. A maximum of two applications can be made up to and including flowering half way (before GS 65) in winter and spring wheat and up to and including emergence of ear just complete in winter and spring barley and winter and spring oats (before GS 59).

Rate of Application
Apply 2 litres LUMEN in a minimum of 200 litres of water per hectare.

MIXING

Half fill the spray tank with clean water and start the agitation. SHAKE THE CONTAINER WELL before use and pour in the required amount of product. Rinse any empty containers thoroughly and add rinsings to the spray tank. Add the remainder of the water and continue agitation until spraying is completed.

When tank mixes are to be used, each product should be added separately to the spray tank.

MIXTURES WITH OTHER SPRAY CHEMICALS

For details of compatibilities contact your distributor, local BASF representative or the BASF Technical Services Hotline: 0044 845 602 2553**.**

RESISTANCE MANAGEMENT

A maximum of 2 applications of any strobilurin type (QoI) product can be made to any cereal crop.

IMPORTANT NOTES

1. Avoid spray drift on to neighbouring crops.
2. Wash equipment thoroughly after use.

The following does not form part of the product label under 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.

MATERIAL SAFETY DATA SHEET

1. Identification of the substance/mixture and of the company/undertaking

Product identifier

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

1.1. Product identifier

LUMEN

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 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

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]
Acute Tox. 3 (oral)
Acute Tox. 4 (Inhalation – mist)
Skin Sens. 1B
Carc. 2 Repr. 1B
Aquatic Acute 1
Aquatic Chronic 1

According to Directive 67/548/EEC or 1999/45/EC
Carc. Cat. 3
Repr. Cat. 2
Repr. Cat. 3

Possible Hazards:
Harmful by inhalation and if swallowed.
Irritating to skin.
Limited evidence of a carcinogenic effect.
May cause sensitization by skin contact.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Possible risk of impaired fertility.
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:

H332	Harmful if inhaled.
H301	Toxic if swallowed.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary Statements (Prevention):

P280	Wear protective gloves/clothing.
P271	Use only outdoors or in a well-ventilated area.
P260	Do not breathe mist or vapour.
P202	Do not handle until all safety precautions have been read and understood.
P270	Do not eat, drink or smoke when using this product.
P264	Wash contaminated body parts thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or doctor/physician.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
P301 + P330	IF SWALLOWED: rinse mouth.
P391	Collect spillage.
P362 + P364	Take off contaminated clothing and wash before reuse.

Precautionary Statements (Storage):

P405	Store locked up.

Precautionary Statements (Disposal):

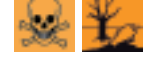
P501	Dispose of contents/container to a licensed waste disposal contractor or collection site except for triple rinsed empty containers which can be disposed of as non-hazardous waste.

Labeling of special preparations (GHS):
Repeated exposure may cause skin dryness or cracking.

According to Regulation (EC) No 1272/2008 [CLP]
Hazard determining component(s) for labelling: PYRACLOSTROBIN, EPOXICONAZOLE, SOLVENT NAPHTHA, ALCOHOLS, ETHOXYLATED, PROPOXYLATED, 1,2-BENZISOTHIAZOL-3(2H)-ONE

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-phrase(s)

R20/22	Harmful by inhalation and if swallowed.
R38	Irritating to skin.
R40	Limited evidence of a carcinogenic effect.

R43	May cause sensitization by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62	Possible risk of impaired fertility.
R61	May cause 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.
S24	Avoid contact with skin.
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: PYRACLOSTROBIN, EPOXICONAZOLE, SOLVENT NAPHTHA, ALCOHOLS, ETHOXYLATED, PROPOXYLATED, 1,2-BENZISOTHIAZOL-3(2H)-ONE

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

pyraclostrobin (ISO); methyl N-{2-[1-(4-chlorophenyl)-1H-pyrazol-3-yloxymethyl]phenyl}(N- methoxy) carbamate

Content (W/W): 7.6 %	Acute Tox. 3 (Inhalation – mist)
CAS Number: 175013-18-0	Skin Corr./Irrit. 2
INDEX-Number: 613-272-00-6	STOT SE 3 (irr. to respiratory syst.)
	Aquatic Acute 1
	Aquatic Chronic 1
	M-factor acute: 100
	M-factor chronic: 100
	H315, H331, H335, H400, H410

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

Content (W/W): 6 %	Carc. 2
CAS Number: 133855-98-8	Repr. 1B
EC-Number: 406-850-2	Aquatic Chronic 2
INDEX-Number: 613-175-00-9	H351, H360Df, H411

solvent naphtha

Content (W/W): < 25 %	Asp. Tox. 1
CAS Number: 64742-94-5	Aquatic Chronic 2
REACH registration number:	H411, H304, EUH066
01- 2119451097-39	

fatty alcohol ethoxylate

Content (W/W): < 10 %	Acute Tox. 2 (Inhalation – mist)
CAS Number: 68002-96-0	Aquatic Acute 1
	H330, H400

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt

Content (W/W): < 5 %	Aquatic Chronic 3
CAS Number: 102980-04-1	H412

naphthalene

Content (W/W): < 0.25 %	Acute Tox. 4 (oral)
CAS Number: 91-20-3	Carc. 2
EC-Number: 202-049-5	Aquatic Acute 1
INDEX-Number: 601-052-00-2	Aquatic Chronic 1
	H302, H351, H400, H410
	M-factor acute: 1
	M-factor chronic: 1

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

Content (W/W): < 0.02 %	Acute Tox. 4 (oral)
CAS Number: 2634-33-5	Skin Corr./Irrit. 2
EC-Number: 220-120-9	Eye Dam./Irrit. 1
INDEX-Number: 613-088-00-6	Skin Sens. 1
	Aquatic Acute 1
	H318, H315, H302, H317, H400
	Specific concentration limit:
	Skin Sens. 1: >= 0.05 %

Propane-1,2-diol

Content (W/W): < 2 %
CAS Number: 57-55-6
EC-Number: 200-338-0
REACH registration number:
01- 2119456809-23

Hazardous ingredients
according to Directive 1999/45/EC

pyraclostrobin (ISO); methyl N-{2-[1-(4-chlorophenyl)-1H-pyrazol-3-yloxymethyl]phenyl}(N- methoxy) carbamate

Content (W/W): 7.6 %
CAS Number: 175013-18-0
INDEX-Number: 613-272-00-6
Hazard symbol(s): T, N
R-phrase(s): 23, 37/38, 50/53

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

Content (W/W): 6 %
CAS Number: 133855-98-8
EC-Number: 406-850-2
INDEX-Number: 613-175-00-9
Hazard symbol(s): T, N
R-phrase(s): 40, 61, 62, 51/53
Carc. Cat. 3
Repr. Cat. 2
Repr. Cat. 3

solvent naphtha

Content (W/W): < 25 %
CAS Number: 64742-94-5
REACH registration number: 01-2119451097-39
Hazard symbol(s): Xn, N
R-phrase(s): 65, 66, 51/53

fatty alcohol ethoxylate
Content (W/W): < 10 %
CAS Number: 68002-96-0
Hazard symbol(s): T, N
R-phrase(s): 23, 50

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt
Content (W/W): < 5 %
CAS Number: 102980-04-1
R-phrase(s): 52/53

naphthalene
Content (W/W): < 0.25 %
CAS Number: 91-20-3
EC-Number: 202-049-5
INDEX-Number: 601-052-00-2
Hazard symbol(s): Xn, N
R-phrase(s): 22, 40, 50/53
Carc. Cat. 3

1,2-benzisothiazol-3(2H)-one; 1,2-benzisothiazolin-3-one
Content (W/W): < 0.02 %
CAS Number: 2634-33-5
EC-Number: 220-120-9
INDEX-Number: 613-088-00-6
Hazard symbol(s): Xn, N
R-phrase(s): 22, 38, 41, 43, 50

Propane-1,2-diol
Content (W/W): < 2 %
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
First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled: Keep patient calm, remove to fresh air, seek medical attention.

On skin contact: Immediately wash thoroughly with soap and water, seek medical attention.

On contact with eyes: Wash affected eyes for at least 15 minutes under running water with eyelids held open.

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

5.3. Advice for fire-fighters
Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

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

SECTION 6: Accidental Release Measures

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

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

6.3. Methods and material for containment and cleaning up
For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).
For large amounts: Dike spillage. Pump off product.
Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. 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: 0 °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
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.

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
91-20-3: naphthalene
TWA value 50 mg/m3 ; 10 ppm (OEL (IE))
STEL value 75 mg/m3 ; 15 ppm (OEL (IE))
TWA value 50 mg/m3 ; 10 ppm (OEL (EU))
indicative
STEL value 75 mg/m3 ; 15 ppm (OEL (IE))
Indicative OELV
TWA value 50 mg/m3 ; 10 ppm (OEL (IE))
Indicative OELV
STEL value 75 mg/m3 ; 15 ppm (OEL (IE))
Indicative OELV
TWA value 50 mg/m3 ; 10 ppm (OEL (IE))
Indicative OELV

133855-98-8: 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

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:	off-white
Odour:	aromatic, moderate odour
Odour threshold:	Not determined since harmful by inhalation.
pH value:	approx. 5.5 – 7.5 (1 %(m), 20 °C)
Freezing point:	approx. -3.2 °C boiling temperature: approx. 100 °C

Flash point:	No flash point – Measurement made up to the boiling point.	(ASTM D93)
Evaporation rate:	not applicable	
Flammability:	not highly flammable	
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:	473 °C	(Directive 92/69/EEC, A.15)
Vapour pressure:	The product has not been tested.	
Density:	approx. 1.05 g/cm3 (20 °C)	
Relative vapour density (air):	not applicable	
Solubility in water:	dispersible	
Partitioning coefficient n-octanol/water (log Kow):	not applicable	
Thermal decomposition:	125 °C, 110 kJ/kg (DSC (OECD 113)) (onset temperature) 305 °C, 160 kJ/kg (DSC (OECD 113)) (onset temperature)	
Viscosity, dynamic:	approx. 52.7 mPa.s (20 °C, 100 1/s)	(OECD 114)
Viscosity, kinematic:	38.2 mm2/s (40 °C)	(OECD 114)
Explosion hazard:	Based on the chemical structure there is no indicating of explosive properties.	
Fire promoting properties:	not fire-propagating	(Directive 2004/73/EC, A.21)

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 acids, strong bases, strong oxidizing agents

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

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Of high toxicity after single ingestion. Of moderate toxicity after short-term inhalation. Virtually nontoxic after a single skin contact. The product has not been tested. The statement has been derived from substances/ products of a similar structure or composition.

Experimental/calculated data:
LD50 rat (oral): > 200 – < 300 mg/kg (OECD Guideline 423)

(by inhalation):The product has not been tested. The statement has been derived from the properties of the individual components.

LD50 rat (dermal): > 5,000 mg/kg (OECD Guideline 402) No mortality was observed.

Information on: pyraclostrobin (ISO); methyl N-{2-[1-(4-chlorophenyl)-1H-pyrazol-3- yloxymethyl]phenyl} (N-methoxy)carbamate
Experimental/calculated data:
LC50 rat (by inhalation): 0.58 mg/l 4 h (OECD Guideline 403) An aerosol with respiratory particles was tested.

Information on: fatty alcohol ethoxylate Experimental/calculated data:
LC50 rat (by inhalation): > 0.25 – *< 1 mg/l 4 h An aerosol was tested.*

Irritation
Assessment of irritating effects: Skin contact causes slight irritation. Not irritating to the eyes. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

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

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization
Assessment of sensitization: Sensitization after skin contact possible. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:
modified Buehler test guinea pig: Caused skin sensitization 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.

Information on: naphthalene
Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was mutagenic in a mammalian cell culture test system. The substance was not mutagenic in a test with mammals. Literature data.

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; (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.

Information on: naphthalene Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by inhalation, a carcinogenic effect was observed. EU-classification The substance was classified as a group 3 carcinogen by the German MAK-Commission (substances for which a suspicion of a carcinogenic potential exists).
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic 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; (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.

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; (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: pyraclostrobin (ISO); methyl N-{2-[1-(4-chlorophenyl)-1H-pyrazol-3- yloxymethyl]phenyl} (N-methoxy)carbamate
Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation. The substance may cause damage to the olfactory epithelium after repeated inhalation.

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: naphthalene Assessment of repeated dose toxicity:
The substance may cause damage to the olfactory epithelium after repeated inhalation. No adverse effects were observed after repeated exposure in animal studies.

Aspiration hazard
No aspiration hazard expected.

Other relevant toxicity information
Misuse can be harmful to health.

SECTION 12: Ecological Information

12.1. Toxicity

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

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Toxicity to fish: LC50 (96 h) 0.074 mg/l, Oncorhynchus mykiss (OECD Guideline 203, static)

No observed effect concentration (96 h) 0.036 mg/l, Oncorhynchus mykiss (OECD Guideline 203, static)

Aquatic invertebrates: EC50 (48 h) 0.14 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

Aquatic plants: EC50 (72 h) 5.05 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)

12.2. Persistence and degradability

Assessment biodegradation and elimination (H_2O):
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: pyraclostrobin (ISO); methyl N-{2-[1-(4-chlorophenyl)-1H-pyrazol-3- yloxymethyl]phenyl} (N-methoxy)carbamate
Assessment biodegradation and elimination (H_2O):
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: pyraclostrobin (ISO); methyl N-{2-[1-(4-chlorophenyl)-1H-pyrazol-3- yloxymethyl]phenyl} (N-methoxy)carbamate
Bioaccumulation potential:
Bioconcentration factor: 379 – 507, Oncorhynchus mykiss (OECD-Guideline 305)
Accumulation in organisms is not to be expected.

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: pyraclostrobin (ISO); methyl N-{2-[1-(4-chlorophenyl)-1H-pyrazol-3- yloxymethyl]phenyl} (N-methoxy)carbamate
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	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains EPOXICONAZOLE, PYRACLOSTROBIN, SOLVENT NAPHTHA)
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 EPOXICONAZOLE, PYRACLOSTROBIN, SOLVENT NAPHTHA)
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 EPOXICONAZOLE, PYRACLOSTROBIN, SOLVENT NAPHTHA)
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 EPOXICONAZOLE, PYRACLOSTROBIN, SOLVENT NAPHTHA)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes Marine pollutant: YES
Special precautions for user:	None known

Air transport

IATA/ICAO

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

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:

T	Toxic.
N	Dangerous for the environment.
Xn	Harmful.
23	Toxic by inhalation.
37/38	Irritating to respiratory system and skin.
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.
51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
65	Harmful: may cause lung damage if swallowed.
66	Repeated exposure may cause skin dryness or cracking.
50	Very toxic to aquatic organisms.
52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic

	environment.
22	Harmful if swallowed.
38	Irritating to skin.
41	Risk of serious damage to eyes.
43	May cause sensitization by skin contact.
Acute Tox.	Acute toxicity
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
Skin Corr./Irrit.	Skin corrosion/irritation
STOT SE	Specific target organ toxicity — single exposure
Asp. Tox.	Aspiration hazard
Eye Dam./Irrit.	Serious eye damage/eye irritation
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.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H351	Suspected of causing cancer.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H411	Toxic to aquatic life with long lasting effects.
H304	May be fatal if swallowed and enters airways.
EUH066	Repeated exposure may cause skin dryness or cracking.
H330	Fatal if inhaled.
H412	Harmful to aquatic life with long lasting effects.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.

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

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