

# Safety data sheet

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BASF Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.

Date / Revised: 05.08.2016

Version: 1.0

Product: **QUIRINUS**

(ID no. 30630198/SDS\_CPA\_GB/EN)

Date of print 05.08.2016

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

### 1.1. Product identifier

## QUIRINUS

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

Relevant identified uses: crop protection product, herbicide

### 1.3. Details of the supplier of the safety data sheet

Company:BASF SE  
67056 Ludwigshafen  
GERMANYContact 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

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## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

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

STOT RE 2

Aquatic Acute 1

Aquatic Chronic 1

H373, H410, EUH401

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 UK regulations.

Pictogram:



Signal Word:

Warning

Hazard Statement:

H373	May cause damage to organs through prolonged or repeated exposure.
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 Statement:

P102	Keep out of reach of children.
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Precautionary Statements (Prevention):

P260	Do not breathe spray.
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Precautionary Statements (Response):

P314	Get medical advice/attention if you feel unwell.
P391	Collect spillage.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.
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Labeling of special preparations (GHS):

EUH208: May produce an allergic reaction. Contains: FLUFENACET

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

Hazard determining component(s) for labelling: FLUFENACET

## 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.

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## SECTION 3: Composition/Information on Ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

#### Chemical nature

crop protection product, suspension concentrate (SC)

#### Hazardous ingredients (GHS)

according to Regulation (EC) No. 1272/2008

flufenacet (ISO); N-(4-fluorophenyl)-N-isopropyl-2-(5-trifluoromethyl-[1,3,4]thiadiazol-2-yloxy)acetamide

Content (W/W): 24 %	Acute Tox. 4 (oral)
CAS Number: 142459-58-3	Skin Sens. 1
INDEX-Number: 613-164-00-9	STOT RE 2
	Aquatic Acute 1
	Aquatic Chronic 1
	H302, H317, H373, H400, H410

picolinafen (ISO); 2-Pyridinecarboxamide, N-(4-fluorophenyl)-6-[3-(trifluoromethyl)phenoxy]-

Content (W/W): 5 %	Aquatic Acute 1
CAS Number: 137641-05-5	Aquatic Chronic 1
	H400, H410

Propane-1,2-diol

Content (W/W): < 10 %
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 hazard classes and the hazard statements, the full text is listed in section 16.

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## SECTION 4: First-Aid Measures

### 4.1. Description of first aid measures

Remove contaminated clothing.

Show container, label and/or safety data sheet to physician.

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:

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.

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## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing media

Suitable extinguishing media:

water spray, dry powder, foam, carbon dioxide

### 5.2. Special hazards arising from the substance or mixture

carbon monoxide, Carbon dioxide, nitrogen oxides

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:

Keep containers cool by spraying with water if exposed to fire. In case of fire and/or explosion do not breathe fumes. 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.

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## 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 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.

### 6.3. Methods and material for containment and cleaning up

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

For large amounts: Dike spillage. Pump off product.

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

### 6.4. Reference to other sections

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

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## SECTION 7: Handling and Storage

### 7.1. Precautions for safe handling

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

Protection against fire and explosion:

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.

### 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.

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## SECTION 8: Exposure Controls/Personal Protection

### 8.1. Control parameters

#### Components with occupational exposure limits

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

TWA value 10 mg/m<sup>3</sup> (WEL/EH 40 (UK)), Particulate

TWA value 474 mg/m<sup>3</sup> ; 150 ppm (WEL/EH 40 (UK)), Total vapour and particulates

Refer to the current edition of HSE Guidance Note EH40 Occupational Exposure Limits (United Kingdom). For normal use and handling refer to the product label/leaflet.

### 8.2. Exposure controls

#### Personal protective equipment

Respiratory protection:

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

Hand protection:

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

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.

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## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

Form: liquid, viscous

Colour: light brown

Odour: aromatic

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Odour threshold:	Not determined due to potential health hazard by inhalation.	
pH value:	approx. 6 - 8 (20 °C)	
Melting temperature:	not determined	
boiling temperature:	not determined	
Flash point:	Non-flammable.	(DIN EN 22719; ISO 2719)
Evaporation rate:	not applicable	
Flammability:	not applicable	
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:	493 °C	(DIN EN 14522)
Vapour pressure:	approx. 23.4 hPa (20 °C)	
Density:	Information applies to the solvent. approx. 1.12 g/cm <sup>3</sup> (20 °C)	(OECD Guideline 109)
Relative vapour density (air):	not applicable	
Solubility in water:	dispersible	
<i>Information on: picolinafen (ISO); 2-Pyridinecarboxamide, N-(4-fluorophenyl)-6-[3-(trifluoromethyl)phenoxy]-</i>		
<i>Partitioning coefficient n-octanol/water (log Kow): 4.7 (Directive 92/69/EEC, A.8)</i>		
<i>(20 °C; pH value: 7)</i>		
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Thermal decomposition:	175 °C, 30 kJ/kg, (DSC (OECD 113)) 275 °C, 250 kJ/kg, (DSC (OECD 113))	
Viscosity, dynamic:	approx. 93 mPa.s (20 °C)	(OECD 114)
Explosion hazard:	not explosive	(Regulation 440/2008/EC, A.14)
Fire promoting properties:	not fire-propagating	(Regulation 440/2008/EC, A.21)

## 9.2. Other information

Other Information:

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

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## 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.

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## SECTION 11: Toxicological Information

### 11.1. Information on toxicological effects

#### Acute toxicity

Assessment of acute toxicity:

Of low toxicity after single ingestion. Virtually nontoxic by 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): > 2,000 mg/kg

LC50 rat (by inhalation): > 5.19 mg/l

LD50 rat (dermal): > 2,000 mg/kg



### Irritation

#### Assessment of irritating effects:

Not irritating to the skin. 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: non-irritant

Serious eye damage/irritation rabbit: non-irritant

### Respiratory/Skin sensitization

#### Assessment of sensitization:

There is no evidence of a skin-sensitizing potential. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Experimental/calculated data:

Mouse Local Lymph Node Assay (LLNA) mouse: Non-sensitizing.

### Germ cell mutagenicity

#### Assessment of mutagenicity:

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

### Carcinogenicity

#### Assessment of carcinogenicity:

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

### Reproductive toxicity

#### Assessment of reproduction toxicity:

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

### Developmental toxicity

#### Assessment of teratogenicity:

The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

### Specific target organ toxicity (single exposure)

No data available.

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: flufenacet (ISO); N-(4-fluorophenyl)-N-isopropyl-2-(5-trifluoromethyl-[1,3,4]thiadiazol-2-yloxy)acetamide*

*Assessment of repeated dose toxicity:*

*Repeated oral exposure may affect certain organs.*

*Information on: picolinafen (ISO); 2-Pyridinecarboxamide, N-(4-fluorophenyl)-6-[3-(trifluoromethyl)phenoxy]-*

*Assessment of repeated dose toxicity:*

*Repeated exposure to large quantities may affect certain organs.*

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Aspiration hazard

No data available.

Other relevant toxicity information

Misuse can be harmful to health.

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**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) 48.8 mg/l, *Oncorhynchus mykiss*

## Aquatic invertebrates:

EC50 (48 h) 32.2 mg/l, *Daphnia magna*

## Aquatic plants:

EC50 (72 h) 0.00169 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201)

No observed effect concentration 0.00032 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: flufenacet (ISO); N-(4-fluorophenyl)-N-isopropyl-2-(5-trifluoromethyl-[1,3,4]thiadiazol-2-yloxy)acetamide*

*Assessment biodegradation and elimination (H<sub>2</sub>O):*

*Not readily biodegradable (by OECD criteria).*

*Information on: picolinafen (ISO); 2-Pyridinecarboxamide, N-(4-fluorophenyl)-6-[3-(trifluoromethyl)phenoxy]-*

*Assessment biodegradation and elimination (H<sub>2</sub>O):*

*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: flufenacet (ISO); N-(4-fluorophenyl)-N-isopropyl-2-(5-trifluoromethyl-[1,3,4]thiadiazol-2-yloxy)acetamide*

*Assessment bioaccumulation potential:*

*Does not accumulate in organisms.*

*Information on: picolinafen (ISO); 2-Pyridinecarboxamide, N-(4-fluorophenyl)-6-[3-(trifluoromethyl)phenoxy]-*

*Assessment bioaccumulation potential:*

*Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is possible.*

### 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: flufenacet (ISO); N-(4-fluorophenyl)-N-isopropyl-2-(5-trifluoromethyl-[1,3,4]thiadiazol-2-yloxy)acetamide*

*Assessment transport between environmental compartments:*

*Adsorption in soil: Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.*

*Information on: picolinafen (ISO); 2-Pyridinecarboxamide, N-(4-fluorophenyl)-6-[3-(trifluoromethyl)phenoxy]-*

*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.

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## SECTION 13: Disposal Considerations

### 13.1. 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.

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## SECTION 14: Transport Information

### Land transport

ADR

UN number	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains FLUFENACET, PICOLINAFEN)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	Tunnel code: E

RID

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UN number UN3082  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S. (contains FLUFENACET, PICOLINAFEN)  
Transport hazard class(es): 9, EHS  
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 FLUFENACET, PICOLINAFEN)  
Transport hazard class(es): 9, EHS  
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 FLUFENACET, PICOLINAFEN)  
Transport hazard class(es): 9, EHS  
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 FLUFENACET, PICOLINAFEN)  
Transport hazard class(es): 9, EHS

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 MARPOL and the IBC Code**

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

**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).

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**SECTION 15: Regulatory Information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

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EUH208: Contains 1,2-benzisothiazol-2(2H)-one. May produce an allergic reaction

EUH208: Contains 2-methylisothiazol-3(2H)-one. May cause an allergic reaction

This product is classified under the European CLP Regulation. (United Kingdom)

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 may be subject to the Control of Major Accident Hazards Regulations (COMAH), and amendments if specific threshold tonnages are exceeded (United Kingdom).

## 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 hazard classes and the hazard statements, if mentioned in section 2 or 3:

STOT RE	Specific target organ toxicity — repeated exposure
Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Acute Tox.	Acute toxicity
Skin Sens.	Skin sensitization
H373	May cause damage to organs through prolonged or repeated exposure.
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.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.

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](mailto: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. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.