

# SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by  
UK REACH Regulations SI 2019/758



## DUAL GOLD

|         |                |             |                                 |
|---------|----------------|-------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 23.01.2025  |
| 11.0    | 07.10.2026     | S1372228414 | Date of first issue: 15.06.2017 |

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

#### 1.1 Product identifier

Trade name : DUAL GOLD

Design code : A9396G

Product Registration Number : MAPP 14649

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

Use of the Sub-stance/Mixture : Herbicide

Recommended restrictions on use : professional use

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

Company : Syngenta UK Limited  
Jealott's Hill International Research Centre  
Bracknell, Berkshire RG42 6EY  
United Kingdom

Telephone : +44 (0) 1223 883400

Telefax : -

E-mail address of person responsible for the SDS : MSDSenquiries.UK@syngenta.com

#### 1.4 Emergency telephone number

Emergency telephone number : +44 1484 538444

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

|                                                |                                                             |
|------------------------------------------------|-------------------------------------------------------------|
| Eye irritation, Category 2                     | H319: Causes serious eye irritation.                        |
| Skin sensitisation, Sub-category 1B            | H317: May cause an allergic skin reaction.                  |
| Carcinogenicity, Category 2                    | H351: Suspected of causing cancer.                          |
| Short-term (acute) aquatic hazard, Category 1  | H400: Very toxic to aquatic life.                           |
| Long-term (chronic) aquatic hazard, Category 1 | H410: Very toxic to aquatic life with long lasting effects. |

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### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

|                                |   |                                                                                   |                                                                                                                                                                                       |                                                                                    |  |
|--------------------------------|---|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--|
| Hazard pictograms              | : |  |                                                                                                      |  |  |
| Signal word                    | : | Warning                                                                           |                                                                                                                                                                                       |                                                                                    |  |
| Hazard statements              | : | H317                                                                              | May cause an allergic skin reaction.                                                                                                                                                  |                                                                                    |  |
|                                |   | H319                                                                              | Causes serious eye irritation.                                                                                                                                                        |                                                                                    |  |
|                                |   | H351                                                                              | Suspected of causing cancer.                                                                                                                                                          |                                                                                    |  |
|                                |   | H410                                                                              | Very toxic to aquatic life with long lasting effects.                                                                                                                                 |                                                                                    |  |
| Supplemental Hazard Statements | : | EUH066                                                                            | Repeated exposure may cause skin dryness or cracking.                                                                                                                                 |                                                                                    |  |
| Precautionary statements       | : | <b>Prevention:</b>                                                                |                                                                                                                                                                                       |                                                                                    |  |
|                                |   | P201                                                                              | Obtain special instructions before use.                                                                                                                                               |                                                                                    |  |
|                                |   | P261                                                                              | Avoid breathing mist or vapours.                                                                                                                                                      |                                                                                    |  |
|                                |   | P280                                                                              | Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.                                                                                     |                                                                                    |  |
|                                |   | <b>Response:</b>                                                                  |                                                                                                                                                                                       |                                                                                    |  |
|                                |   | P308 + P313                                                                       | IF exposed or concerned: Get medical advice/ attention.                                                                                                                               |                                                                                    |  |
|                                |   | P333 + P313                                                                       | If skin irritation or rash occurs: Get medical advice/ attention.                                                                                                                     |                                                                                    |  |
|                                |   | P391                                                                              | Collect spillage.                                                                                                                                                                     |                                                                                    |  |
|                                |   | <b>Disposal:</b>                                                                  |                                                                                                                                                                                       |                                                                                    |  |
|                                |   | 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. |                                                                                    |  |

Hazardous components which must be listed on the label:

S-metolachlor (ISO)

#### Additional Labelling

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

##### Components

| Chemical name                                                           | CAS-No.<br>EC-No.<br>Index-No.<br>Registration number | Classification                                                                                                                                                                                        | Concentration<br>(% w/w) |
|-------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| S-metolachlor (ISO)                                                     | 87392-12-9<br>607-432-00-4                            | Skin Sens. 1; H317<br>Carc. 2; H351<br>Aquatic Acute 1;<br>H400<br>Aquatic Chronic 1;<br>H410<br>EUH066<br><br>M-Factor (Acute<br>aquatic toxicity): 10<br>M-Factor (Chronic<br>aquatic toxicity): 10 | >= 70 - < 90             |
| poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy- | 99734-09-5                                            | Aquatic Chronic 3;<br>H412                                                                                                                                                                            | >= 2.5 - < 10            |
| hydrocarbons, C10-C13, aromatics, <1% naphthalene                       | Not Assigned<br>UK-01-2250044631-9-0001               | Asp. Tox. 1; H304<br>Aquatic Chronic 2;<br>H411<br>EUH066                                                                                                                                             | >= 2.5 - < 10            |
| benzenesulfonic acid, C10-13-alkyl derivs., calcium salts               | 1335202-81-7                                          | Skin Irrit. 2; H315<br>Eye Dam. 1; H318<br>Aquatic Chronic 3;<br>H412                                                                                                                                 | >= 2.5 - < 3             |
| 2-methylpropan-1-ol                                                     | 78-83-1<br>201-148-0<br>603-108-00-1                  | Flam. Liq. 3; H226<br>Skin Irrit. 2; H315<br>Eye Dam. 1; H318<br>STOT SE 3; H335<br>(Respiratory system)<br>STOT SE 3; H336<br>(Central nervous system)                                               | >= 1 - < 3               |

For explanation of abbreviations see section 16.

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### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.
- If inhaled : Move the victim to fresh air.  
If breathing is irregular or stopped, administer artificial respiration.  
Keep patient warm and at rest.  
Call a physician or poison control centre immediately.
- In case of skin contact : Take off all contaminated clothing immediately.  
Wash off immediately with plenty of water.  
If skin irritation persists, call a physician.  
Wash contaminated clothing before re-use.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Remove contact lenses.  
Immediate medical attention is required.
- If swallowed : If swallowed, seek medical advice immediately and show this container or label.  
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

#### 4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Aspiration may cause pulmonary oedema and pneumonitis.
- Risks : May cause an allergic skin reaction.  
Causes serious eye irritation.  
Suspected of causing cancer.  
Repeated exposure may cause skin dryness or cracking.

#### 4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : There is no specific antidote available.  
Treat symptomatically.  
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

- Suitable extinguishing media : Extinguishing media - small fires  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  
Extinguishing media - large fires  
Alcohol-resistant foam

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Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

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

Specific hazards during fire-fighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).  
Exposure to decomposition products may be a hazard to health.  
Flash back possible over considerable distance.

Hazardous combustion products : Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Chlorine compounds  
Sulphur oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

Further information : Do not allow run-off from fire fighting to enter drains or water courses.  
Cool closed containers exposed to fire with water spray.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.  
Keep people away from and upwind of spill/leak.  
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.  
Remove all sources of ignition.  
Pay attention to flashback.

### 6.2 Environmental precautions

Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Do not flush into surface water or sanitary sewer system.  
If the product contaminates rivers and lakes or drains inform respective authorities.

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

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Clean contaminated surface thoroughly.  
Clean with detergents. Avoid solvents.  
Retain and dispose of contaminated wash water.

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### 6.4 Reference to other sections

For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Avoid contact with skin and eyes.  
When using do not eat, drink or smoke.  
Use only in an area containing flame proof equipment.  
Take precautionary measures against static discharges.  
For personal protection see section 8.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage : Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from combustible material. Keep in an area equipped with sprinklers. Keep away from food, drink and animal feed-stuffs. No smoking.

### 7.3 Specific end use(s)

Specific use(s) : For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

| Components                                        | CAS-No.      | Value type (Form of exposure) | Control parameters  | Basis    |
|---------------------------------------------------|--------------|-------------------------------|---------------------|----------|
| S-metolachlor (ISO)                               | 87392-12-9   | TWA                           | 5 mg/m3             | Syngenta |
| hydrocarbons, C10-C13, aromatics, <1% naphthalene | Not Assigned | TWA                           | 8 ppm<br>50 mg/m3   | Supplier |
| 2-methylpropan-1-ol                               | 78-83-1      | TWA                           | 50 ppm<br>154 mg/m3 | GB EH40  |
|                                                   |              | STEL                          | 75 ppm<br>231 mg/m3 | GB EH40  |

#### Derived No Effect Level (DNEL)

| Substance name                                    | End Use | Exposure routes | Potential health effects   | Value      |
|---------------------------------------------------|---------|-----------------|----------------------------|------------|
| hydrocarbons, C10-C13, aromatics, <1% naphthalene | Workers | Inhalation      | Long-term systemic effects | 151 mg/m3  |
|                                                   | Workers | Dermal          | Long-term systemic effects | 12.5 mg/kg |

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|                                                           |           |            |                                                     |                       |
|-----------------------------------------------------------|-----------|------------|-----------------------------------------------------|-----------------------|
|                                                           | Consumers | Inhalation | Long-term systemic effects                          | 32 mg/m <sup>3</sup>  |
|                                                           | Consumers | Dermal     | Long-term systemic effects                          | 7.5 mg/kg             |
|                                                           | Consumers | Oral       | Long-term systemic effects                          | 7.5 mg/kg             |
| 2-methylpropan-1-ol                                       | Workers   | Inhalation | Long-term systemic effects, Long-term local effects | 310 mg/m <sup>3</sup> |
|                                                           | Consumers | Inhalation | Long-term systemic effects, Long-term local effects | 55 mg/m <sup>3</sup>  |
|                                                           | Consumers | Oral       | Long-term systemic effects, Long-term local effects | 25 mg/kg              |
| benzenesulfonic acid, C10-13-alkyl derivs., calcium salts | Consumers | Oral       | Long-term systemic effects                          | 89 mg/kg              |
|                                                           | Consumers | Dermal     | Long-term systemic effects                          | 85 mg/kg              |
|                                                           | Workers   | Dermal     | Long-term systemic effects                          | 1.7 mg/kg             |

### Predicted No Effect Concentration (PNEC)

| Substance name                                            | Environmental Compartment | Value        |
|-----------------------------------------------------------|---------------------------|--------------|
| 2-methylpropan-1-ol                                       | Fresh water               | 0.4 mg/l     |
|                                                           | Sewage treatment plant    | 10 mg/l      |
|                                                           | Soil                      | 0.0699 mg/kg |
|                                                           | Marine sediment           | 0.152 mg/kg  |
|                                                           | Fresh water sediment      | 1.52 mg/kg   |
|                                                           | Marine water              | 0.04 mg/l    |
| benzenesulfonic acid, C10-13-alkyl derivs., calcium salts | Fresh water               | 0.023 mg/l   |
|                                                           | Marine water              | 0.002 mg/l   |
|                                                           | Fresh water sediment      | 0.174 mg/kg  |
|                                                           | Marine sediment           | 0.017 mg/kg  |
|                                                           | Soil                      | 0.62 mg/kg   |

## 8.2 Exposure controls

### Appropriate engineering controls

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.  
Where necessary, seek additional occupational hygiene advice.

### Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Tightly fitting safety goggles  
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

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### Hand protection

|                    |   |                |
|--------------------|---|----------------|
| Material           | : | Nitrile rubber |
| Break through time | : | > 480 min      |
| Glove thickness    | : | 0.5 mm         |

|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remarks | : | Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. |
|---------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                          |   |                                                                                                                                          |
|--------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------|
| Skin and body protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. |
|--------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------|

Remove and wash contaminated clothing before re-use.

Wear as appropriate:

Impervious clothing

|                        |   |                                                                 |
|------------------------|---|-----------------------------------------------------------------|
| Respiratory protection | : | No personal respiratory protective equipment normally required. |
|------------------------|---|-----------------------------------------------------------------|

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

|                     |   |                                                                                                                                                                                              |
|---------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protective measures | : | The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice. |
|---------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                 |   |                            |
|-----------------|---|----------------------------|
| Appearance      | : | liquid                     |
| Colour          | : | light yellow to dark brown |
| Odour           | : | No data available          |
| Odour Threshold | : | No data available          |

|    |   |                                |
|----|---|--------------------------------|
| pH | : | 4 - 8<br>Concentration: 1 %w/v |
|----|---|--------------------------------|

|                              |   |                   |
|------------------------------|---|-------------------|
| Melting point/freezing point | : | No data available |
|------------------------------|---|-------------------|

|                                         |   |                   |
|-----------------------------------------|---|-------------------|
| Initial boiling point and boiling range | : | No data available |
|-----------------------------------------|---|-------------------|

|             |   |                                            |
|-------------|---|--------------------------------------------|
| Flash point | : | 81 °C<br>Method: Pensky-Martens closed cup |
|-------------|---|--------------------------------------------|

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|                                                  |   |                                                          |
|--------------------------------------------------|---|----------------------------------------------------------|
| Evaporation rate                                 | : | No data available                                        |
| Flammability                                     | : | No data available                                        |
| Upper explosion limit / Upper flammability limit | : | No data available                                        |
| Lower explosion limit / Lower flammability limit | : | No data available                                        |
| Vapour pressure                                  | : | No data available                                        |
| Relative vapour density                          | : | No data available                                        |
| Density                                          | : | 1.11 g/cm <sup>3</sup>                                   |
| Solubility(ies)                                  |   |                                                          |
| Water solubility                                 | : | No data available                                        |
| Solubility in other solvents                     | : | No data available                                        |
| Partition coefficient: n-octanol/water           | : | No data available                                        |
| Auto-ignition temperature                        | : | 415 °C                                                   |
| Decomposition temperature                        | : | No data available                                        |
| Viscosity                                        |   |                                                          |
| Viscosity, dynamic                               | : | 128 mPa,s (20 °C)                                        |
|                                                  |   | 36.6 mPa,s (40 °C)                                       |
| Viscosity, kinematic                             | : | No data available                                        |
| Explosive properties                             | : | Not explosive                                            |
| Oxidizing properties                             | : | The substance or mixture is not classified as oxidizing. |

### 9.2 Other information

|                 |   |                       |
|-----------------|---|-----------------------|
| Surface tension | : | 32.1 mN/m, 1 %, 20 °C |
| Particle size   | : | No data available     |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

None reasonably foreseeable.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

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Hazardous reactions : No dangerous reaction known under conditions of normal use.

### 10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

### 10.5 Incompatible materials

Materials to avoid : None known.

### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Information on likely routes of exposure : Ingestion  
Inhalation  
Skin contact  
Eye contact

#### Acute toxicity

Not classified due to lack of data.

#### Product:

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.09 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

#### Components:

##### **S-metolachlor (ISO):**

Acute oral toxicity : LD50 (Rat, male and female): 2,672 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 2.91 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

LC50 (Rat, male and female): > 4.33 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity  
The value is given in analogy to the following substances:  
metolachlor

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

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### benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Acute oral toxicity : LD50 (Rat): 4,445 mg/kg

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

### 2-methylpropan-1-ol:

Acute oral toxicity : LD50 (Rat): 2,830 - 3,350 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 24.6 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 2,460 mg/kg

### Skin corrosion/irritation

Based on available data, the classification criteria are not met.

#### Product:

|         |                      |
|---------|----------------------|
| Species | : Rabbit             |
| Result  | : No skin irritation |

#### Components:

##### S-metolachlor (ISO):

|         |                      |
|---------|----------------------|
| Species | : Rabbit             |
| Result  | : No skin irritation |

##### hydrocarbons, C10-C13, aromatics, <1% naphthalene:

|        |                                                         |
|--------|---------------------------------------------------------|
| Result | : Repeated exposure may cause skin dryness or cracking. |
|--------|---------------------------------------------------------|

##### benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

|         |                       |
|---------|-----------------------|
| Species | : Rabbit              |
| Result  | : Irritating to skin. |

##### 2-methylpropan-1-ol:

|        |                       |
|--------|-----------------------|
| Result | : Irritating to skin. |
|--------|-----------------------|

### Serious eye damage/eye irritation

Causes serious eye irritation.

#### Product:

|         |                                                |
|---------|------------------------------------------------|
| Species | : Rabbit                                       |
| Result  | : Irritation to eyes, reversing within 21 days |

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### Components:

#### **S-metolachlor (ISO):**

|         |   |                   |
|---------|---|-------------------|
| Species | : | Rabbit            |
| Result  | : | No eye irritation |

#### **benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:**

|         |   |                                 |
|---------|---|---------------------------------|
| Species | : | Rabbit                          |
| Result  | : | Risk of serious damage to eyes. |

#### **2-methylpropan-1-ol:**

|        |   |                                 |
|--------|---|---------------------------------|
| Result | : | Risk of serious damage to eyes. |
|--------|---|---------------------------------|

### **Respiratory or skin sensitisation**

#### **Skin sensitisation**

May cause an allergic skin reaction.

#### **Respiratory sensitisation**

Not classified due to lack of data.

### Product:

|           |   |                                                    |
|-----------|---|----------------------------------------------------|
| Test Type | : | Local lymph node assay (LLNA)                      |
| Species   | : | Mouse                                              |
| Result    | : | The product is a skin sensitiser, sub-category 1B. |

### Components:

#### **S-metolachlor (ISO):**

|         |   |                                          |
|---------|---|------------------------------------------|
| Species | : | Guinea pig                               |
| Result  | : | May cause sensitisation by skin contact. |

#### **2-methylpropan-1-ol:**

|         |   |                                                                      |
|---------|---|----------------------------------------------------------------------|
| Species | : | Guinea pig                                                           |
| Result  | : | Does not cause skin sensitisation.                                   |
| Remarks | : | Information given is based on data obtained from similar substances. |

### **Germ cell mutagenicity**

Not classified due to lack of data.

### Components:

#### **S-metolachlor (ISO):**

|                                    |   |                                                    |
|------------------------------------|---|----------------------------------------------------|
| Germ cell mutagenicity- Assessment | : | Animal testing did not show any mutagenic effects. |
|------------------------------------|---|----------------------------------------------------|

#### **poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:**

|                                    |   |                                               |
|------------------------------------|---|-----------------------------------------------|
| Germ cell mutagenicity- Assessment | : | In vitro tests did not show mutagenic effects |
|------------------------------------|---|-----------------------------------------------|

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### Carcinogenicity

Suspected of causing cancer.

#### Components:

##### **S-metolachlor (ISO):**

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

### Reproductive toxicity

Not classified due to lack of data.

#### Components:

##### **S-metolachlor (ISO):**

Reproductive toxicity - Assessment : No toxicity to reproduction  
No effects on or via lactation

### STOT - single exposure

Not classified due to lack of data.

#### Components:

##### **2-methylpropan-1-ol:**

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

### STOT - repeated exposure

Not classified due to lack of data.

#### Components:

##### **S-metolachlor (ISO):**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Aspiration hazard

Not classified due to lack of data.

#### Components:

##### **hydrocarbons, C10-C13, aromatics, <1% naphthalene:**

May be fatal if swallowed and enters airways.

##### **2-methylpropan-1-ol:**

May be harmful if swallowed and enters airways.

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### Endocrine disrupting properties

#### Product:

Assessment : This substance/mixture does not contain components considered to have endocrine disrupting properties for human health according to UK REACH Article 57(f), at levels of 0.1% or higher.

#### Components:

##### **S-metolachlor (ISO):**

Assessment : Does not have endocrine disrupting properties.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 8.8 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 28 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0.09 mg/l  
Exposure time: 96 h

EC10 (Raphidocelis subcapitata (freshwater green alga)): 0.034 mg/l  
End point: Growth rate  
Exposure time: 96 h

NOEC (Raphidocelis subcapitata (freshwater green alga)): 0.022 mg/l  
End point: Growth rate  
Exposure time: 96 h

ErC50 (Lemna gibba (gibbous duckweed)): 0.23 mg/l  
Exposure time: 7 d

EC10 (Lemna gibba (gibbous duckweed)): 0.012 mg/l  
End point: Growth rate  
Exposure time: 7 d

NOEC (Lemna gibba (gibbous duckweed)): 0.0022 mg/l  
End point: Growth rate  
Exposure time: 7 d

#### Components:

##### **S-metolachlor (ISO):**

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|                                                                        |   |                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                                       | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 12 mg/l<br>Exposure time: 96 h                                                                                                                                                                                                                                                                                                                       |
| Toxicity to daphnia and other aquatic invertebrates                    | : | EC50 (Americamysis): 1.4 mg/l<br>Exposure time: 96 h                                                                                                                                                                                                                                                                                                                                             |
| Toxicity to algae/aquatic plants                                       | : | ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0.056 mg/l<br>Exposure time: 72 h<br><br>EC10 (Raphidocelis subcapitata (freshwater green alga)): 0.014 mg/l<br>End point: Growth rate<br>Exposure time: 72 h<br><br>ErC50 (Elodea canadensis (Canadian waterweed)): 0.062 mg/l<br>Exposure time: 7 d<br><br>NOEC (Lemna gibba (gibbous duckweed)): 0.00384 mg/l<br>Exposure time: 7 d |
| M-Factor (Acute aquatic toxicity)                                      | : | 10                                                                                                                                                                                                                                                                                                                                                                                               |
| Toxicity to fish (Chronic toxicity)                                    | : | EC10: 0.22 mg/l<br>Exposure time: 35 d<br>Species: Pimephales promelas (fathead minnow)                                                                                                                                                                                                                                                                                                          |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC: 0.13 mg/l<br>Exposure time: 28 d<br>Species: Americamysis                                                                                                                                                                                                                                                                                                                                  |
| M-Factor (Chronic aquatic toxicity)                                    | : | 10                                                                                                                                                                                                                                                                                                                                                                                               |

### poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:

#### Ecotoxicology Assessment

|                          |   |                                                    |
|--------------------------|---|----------------------------------------------------|
| Acute aquatic toxicity   | : | Harmful to aquatic life.                           |
| Chronic aquatic toxicity | : | Harmful to aquatic life with long lasting effects. |

#### hydrocarbons, C10-C13, aromatics, <1% naphthalene:

|                                                     |   |                                                                                                                                                              |
|-----------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | : | LL50 (Oncorhynchus mykiss (rainbow trout)): 3.6 mg/l<br>Exposure time: 96 h<br>Remarks: Information given is based on data obtained from similar substances. |
| Toxicity to daphnia and other aquatic invertebrates | : | EL50 (Daphnia magna (Water flea)): 1.1 mg/l<br>Exposure time: 48 h<br>Remarks: Information given is based on data obtained from similar substances.          |

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Toxicity to algae/aquatic plants : EL50 (Raphidocelis subcapitata (freshwater green alga)): 7.9 mg/l  
End point: Growth rate  
Exposure time: 72 h  
Remarks: Information given is based on data obtained from similar substances.

NOELR (Raphidocelis subcapitata (freshwater green alga)): 0.22 mg/l  
End point: Growth rate  
Exposure time: 72 h  
Remarks: Information given is based on data obtained from similar substances.

### Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

### benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Toxicity to fish : LC50 (Fish): > 1 - < 10 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.9 mg/l  
Exposure time: 48 h  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 29 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials  
  
NOEC (Raphidocelis subcapitata (freshwater green alga)): 0.5 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC: 0.23 mg/l  
Exposure time: 72 d  
Species: Oncorhynchus mykiss (rainbow trout)  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1.18 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Remarks: Based on data from similar materials

### 2-methylpropan-1-ol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1,430 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): 1,100 mg/l  
Exposure time: 48 h

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Toxicity to algae/aquatic plants : EC50 (Raphidocelis subcapitata (freshwater green alga)):  
1,799 mg/l  
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 20 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

### 12.2 Persistence and degradability

#### Components:

##### **S-metolachlor (ISO):**

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 53 - 147 d  
Remarks: Product is not persistent.

##### **poly(oxy-1,2-ethanediyl), -[2,4,6-tris(1-phenylethyl)phenyl]- -hydroxy-:**

Biodegradability : Result: Not readily biodegradable.

##### **hydrocarbons, C10-C13, aromatics, <1% naphthalene:**

Biodegradability : Result: Readily biodegradable.

##### **benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:**

Biodegradability : Result: Readily biodegradable.

##### **2-methylpropan-1-ol:**

Biodegradability : Result: Readily biodegradable.

### 12.3 Bioaccumulative potential

#### Components:

##### **S-metolachlor (ISO):**

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.05 (25 °C)

### 12.4 Mobility in soil

#### Components:

##### **S-metolachlor (ISO):**

Distribution among environmental compartments : Remarks: Moderately mobile in soils

Stability in soil : Dissipation time: 12 - 46 d  
Percentage dissipation: 50 % (DT50)  
Remarks: Product is not persistent.

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### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### Components:

##### **S-metolachlor (ISO):**

Assessment : Not persistent, bioaccumulative, and toxic (PBT).  
Not very persistent and very bioaccumulative (vPvB).

##### **2-methylpropan-1-ol:**

Assessment : Not persistent, bioaccumulative, and toxic (PBT).  
Not very persistent and very bioaccumulative (vPvB).

### 12.6 Other adverse effects

#### Product:

#### Components:

##### **S-metolachlor (ISO):**

#### **Endocrine disrupting properties**

#### Product:

Assessment : This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f) at levels of 0.1% or higher.

#### Components:

##### **S-metolachlor (ISO):**

Assessment : Does not have endocrine disrupting properties.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Do not contaminate ponds, waterways or ditches with chemical or used container.  
Do not dispose of waste into sewer.  
Where possible recycling is preferred to disposal or incineration.  
If recycling is not practicable, dispose of in compliance with local regulations.

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Contaminated packaging : Empty remaining contents.  
Triple rinse containers.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not re-use empty containers.

## SECTION 14: Transport information

### 14.1 UN number

|      |           |
|------|-----------|
| ADR  | : UN 3082 |
| RID  | : UN 3082 |
| IMDG | : UN 3082 |
| IATA | : UN 3082 |

### 14.2 UN proper shipping name

|      |                                                                          |
|------|--------------------------------------------------------------------------|
| ADR  | : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(S-METOLACHLOR) |
| RID  | : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(S-METOLACHLOR) |
| IMDG | : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(S-METOLACHLOR) |
| IATA | : Environmentally hazardous substance, liquid, n.o.s.<br>(S-METOLACHLOR) |

### 14.3 Transport hazard class(es)

|      | Class | Subsidiary risks |
|------|-------|------------------|
| ADR  | : 9   |                  |
| RID  | : 9   |                  |
| IMDG | : 9   |                  |
| IATA | : 9   |                  |

### 14.4 Packing group

|                              |                                                                                                                                                                                                                                    |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ADR                          |                                                                                                                                                                                                                                    |
| Packing group                | : III                                                                                                                                                                                                                              |
| Classification Code          | : M6                                                                                                                                                                                                                               |
| Hazard Identification Number | : 90                                                                                                                                                                                                                               |
| Labels                       | : 9                                                                                                                                                                                                                                |
| Tunnel restriction code      | : (-)                                                                                                                                                                                                                              |
| Remarks                      | : This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids. |

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### RID

Packing group : III  
Classification Code : M6  
Hazard Identification Number : 90  
Labels : 9  
Remarks : This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

### IMDG

Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Remarks : This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

### IATA (Cargo)

Packing instruction (cargo aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous  
Remarks : This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

### IATA (Passenger)

Packing instruction (passenger aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous  
Remarks : This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

## 14.5 Environmental hazards

### ADR

Environmentally hazardous : yes

### RID

Environmentally hazardous : yes

### IMDG

Marine pollutant : yes

### IATA (Passenger)

Environmentally hazardous : yes

### IATA (Cargo)

Environmentally hazardous : yes

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### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

|                                                                                                                 |    |                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UK REACH List of restrictions (Annex 17)                                                                        | :  | Conditions of restriction for the following entries should be considered:<br>Number on list 3<br><br>Number on list 40<br>This substance/mixture shall not be used in aerosol dispensers intended for supply to the general public for entertainment and decorative purposes. |
| UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation                             | :  | Not applicable                                                                                                                                                                                                                                                                |
| The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) | :  | Not applicable                                                                                                                                                                                                                                                                |
| Regulation (EU) No 2024/590 on substances that deplete the ozone layer                                          | :  | Not applicable                                                                                                                                                                                                                                                                |
| UK REACH List of substances subject to authorisation (Annex XIV)                                                | :  | Not applicable                                                                                                                                                                                                                                                                |
| GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation                           | :  | Not applicable                                                                                                                                                                                                                                                                |
| Control of Major Accident Hazards Regulations 2015 (COMAH)                                                      | E1 | ENVIRONMENTAL HAZARDS                                                                                                                                                                                                                                                         |
| Volatile organic compounds                                                                                      | :  | Directive 2010/75/EU of 24 November 2010 on industrial and livestock rearing emissions (integrated pollution prevention and control)<br>Not applicable                                                                                                                        |

### 15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

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### SECTION 16: Other information

#### Full text of H-Statements

|      |                                                         |
|------|---------------------------------------------------------|
| H226 | : Flammable liquid and vapour.                          |
| H304 | : May be fatal if swallowed and enters airways.         |
| H315 | : Causes skin irritation.                               |
| H317 | : May cause an allergic skin reaction.                  |
| H318 | : Causes serious eye damage.                            |
| H335 | : May cause respiratory irritation.                     |
| H336 | : May cause drowsiness or dizziness.                    |
| H351 | : Suspected of causing cancer.                          |
| H400 | : Very toxic to aquatic life.                           |
| H410 | : Very toxic to aquatic life with long lasting effects. |
| H411 | : Toxic to aquatic life with long lasting effects.      |
| H412 | : Harmful to aquatic life with long lasting effects.    |

#### Full text of other abbreviations

|                 |                                                          |
|-----------------|----------------------------------------------------------|
| Aquatic Acute   | : Short-term (acute) aquatic hazard                      |
| Aquatic Chronic | : Long-term (chronic) aquatic hazard                     |
| Asp. Tox.       | : Aspiration hazard                                      |
| Carc.           | : Carcinogenicity                                        |
| Eye Dam.        | : Serious eye damage                                     |
| Flam. Liq.      | : Flammable liquids                                      |
| PMT             | : Persistent, mobile and toxic                           |
| Skin Irrit.     | : Skin irritation                                        |
| Skin Sens.      | : Skin sensitisation                                     |
| STOT SE         | : Specific target organ toxicity - single exposure       |
| GB EH40         | : UK. EH40 WEL - Workplace Exposure Limits               |
| Syngenta        | : Syngenta Occupational Exposure Limit                   |
| GB EH40 / TWA   | : Long-term exposure limit (8-hour TWA reference period) |
| GB EH40 / STEL  | : Short-term exposure limit (15-minute reference period) |
| Syngenta / TWA  | : Time weighted average                                  |

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of

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Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

### Further information

#### Classification of the mixture:

|                   |      |
|-------------------|------|
| Eye Irrit. 2      | H319 |
| Skin Sens. 1B     | H317 |
| Carc. 2           | H351 |
| Aquatic Acute 1   | H400 |
| Aquatic Chronic 1 | H410 |

#### Classification procedure:

|                                     |
|-------------------------------------|
| Based on product data or assessment |
| Based on product data or assessment |
| Calculation method                  |
| Based on product data or assessment |
| Based on product data or assessment |

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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