

# Lutimor

syngenta®

## GROUP 1 HERBICIDE

**Product registration number:** MAPP 19856  
**UFI:** PWF4-80FT-E00J-CK00

Emulsifiable concentrate containing 55 g/l pinoxaden,  
 13.75 g/l cloquintocet-mexyl and methyl-2,4-pentanediol.

Controls wild oats and ryegrasses in winter and spring wheat  
 and winter and spring barley. Can contribute to the control of  
 blackgrass in winter and spring barley as part of an integrated  
 control strategy.

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

**In case of toxic or transport emergency ring  
 +44 (0)1484 538444 any time**

Syngenta UK Limited, CPC 4, Capital Park, Cambridge CB21 5XE  
 Tel: Cambridge (01223) 883400

**SHAKE WELL BEFORE USE. PROTECT FROM FROST.**

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 the SYNGENTA Logo and the PURPOSE ICON  
 are Trademarks of a Syngenta Group Company

# 3 litres

This product label is compliant  
 with the CPA Voluntary Initiative  
 (VI) guidance.



The  
 Voluntary  
 Initiative

### SAFETY PRECAUTIONS

#### (a) Operator protections

Engineering control of operator exposure must be  
 used where reasonably in practicable in addition to the  
 following personal protective equipment:

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

However engineering controls may replace personal protective  
 equipment if a COSHH assessment shows they provide an equal or  
 higher standard of protection.

**WASH SPLASHES** from skin immediately.

**WASH HANDS AND EXPOSED SKIN** before meals and after work.

#### (b) Environmental Protection

Do not contaminate water with the product or its container.

Do not clean application equipment near surface water/avoid  
 contamination via drains from farmyards and roads.

Extreme care must be taken to avoid spray drift onto non-crop  
 plants outside of the target area.

#### (c) Storage and disposal

**RINSE CONTAINER THOROUGHLY** by using an integrated pressure  
 rinsing device or manually rinsing three times. Add washings to  
 sprayer at time of filling and dispose of safely.

**KEEP IN ORIGINAL CONTAINER**, tightly closed, in a safe place.



L1084755 GBRI/01A PPE 4153146

**KEEP AREA CLEAR FOR BARCODE**  
**50mm x 20mm**

**L & PPE numbers must be kept close  
 to this unprinted barcode area**

**LUTIMOR**

An emulsifiable concentrate containing  
55 g/l pinoxaden

**Warning**

**Causes skin irritation.**

**May cause an allergic skin reaction.**

**Suspected of damaging the unborn child.**

**Toxic to aquatic life with long lasting effects.**

Obtain special instructions before use.

Avoid breathing mist or vapours.

Wash skin thoroughly after handling.

Wear protective gloves/ protective clothing/ eye protection/  
face protection/ hearing protection.

IF exposed or concerned: Get medical advice/ attention.

Collect spillage.

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.

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

**MAPP No. 19856 UFI: PWF4-80FT-E00J-CKQ0**

**IMPORTANT INFORMATION**

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE.

| Crop   | Maximum total dose (litres/hectare/crop) | Maximum no. of applications | Latest time of application                     |
|--------|--|-----------------------------|--|
| Wheat  | 0.82                                     | One per crop                | Before flag leaf sheath extending stage (GS41) |
| Barley | 1.1                                      | One per crop                | Before flag leaf sheath extending stage (GS41) |

**Other Specific Restrictions:**

To avoid the build up of resistance do not apply products containing an ACCase inhibitor herbicide more than twice to any crop. In addition, do not use this product in mixture or sequence with any other product containing pinoxaden.

This product may only be applied after 1st February in the year of harvest.

Do not apply by hand-held equipment.

Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area.

**READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.**

## **DIRECTIONS FOR USE**

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

## **RESTRICTIONS**

Do not use on oats.

Do not spray crops under stress or to crops suffering from waterlogging, pest attack, disease or frost.

Do not spray crops undersown with grass mixtures.

Rain within one hour after application may reduce grass-weed control.

Do not allow spray to drift onto neighbouring crops of oats, ryegrass or maize.

Avoid the use of hormone-containing herbicides in mixture or sequence with LUTIMOR. When LUTIMOR is applied first, leave 7 days before applying hormone herbicides. If hormone-containing products are applied first, leave 21 days before LUTIMOR is applied.

## **GENERAL INFORMATION**

LUTIMOR is a foliar acting grass-weed killer for the control of wild oats, Italian rye-grass and perennial rye-grass (from seed) in winter and spring wheat and winter and spring barley. It is an ACCase inhibitor, also classified by the Herbicide Resistance Action Committee as 'Group 1'. LUTIMOR also controls blackgrass in winter and spring barley as part of an integrated control strategy.

## **WEEDS CONTROLLED**

LUTIMOR controls wild oats, Italian rye-grass and perennial rye-grass (from seed) in winter and spring wheat and winter and spring barley. In winter and spring barley LUTIMOR can contribute to control of blackgrass as part of an integrated control programme.

## **RESISTANCE MANAGEMENT**

This product contains pinoxaden which is an ACCase inhibitor, also classified by the Herbicide Resistance Action Committee as 'Group 1'.

Use only as part of a resistance management strategy that includes cultural methods of control and does not use ACCase inhibitors as the sole chemical method of grass-weed control.

Applying a second product containing an ACCase inhibitor to a crop will increase the risk of resistance development; only use a second ACCase inhibitor to control different weeds at a different timing.

Strains of some annual grasses (e.g. black-grass, wild-oats, and Italian rye-grass) have developed resistance to herbicides which may lead to poor control. A strategy for preventing and managing such resistance should be adopted. Guidelines have been produced by the Weed Resistance Action Group and copies are available from AHDB, CPA, your distributor, crop advisor or product manufacturer.

Key aspects of the LUTIMOR resistance management strategy are:

- Always follow WRAG guidelines for preventing and managing herbicide resistant grass weeds.
- Do not use LUTIMOR or any other ACCase inhibitor as the sole means of grass weed control in successive crops.
- Use grassweed herbicides with different modes of action throughout the cropping rotation.
- To reduce the risk of developing resistance, applications should be made to young, actively growing weeds.
- Use tank/product mixes or sequences of herbicides with different modes of action within individual crops, or successive crops.
- Monitor weed control effectiveness and investigate any odd patches of poor grass weed control. If unexplained, contact your agronomist who may consider a resistance test appropriate.
- Use crop rotation and other cultural control measures to prevent and manage herbicide resistant grass weeds.
- Only apply LUTIMOR once per crop.
- Where resistant biotypes are present control from LUTIMOR will be unacceptable.

LUTIMOR has no residual activity. Optimum weed control will only be achieved when all grass weeds have emerged.

The activity of LUTIMOR is not affected by soil type, organic matter or straw residues.

LUTIMOR does not control broad-leaved weeds and if these are present a specific broad-leaved weed herbicide will be required.

LUTIMOR is not recommended for the control of black grass in winter or spring wheat.

## **CROP SPECIFIC INFORMATION**

### **Crops**

LUTIMOR can be used on all varieties of winter and spring wheat and winter and spring barley.

### **Timing**

Spray after 1st February to before flag leaf sheath extending stage (GS 41) of the crop. Spraying should be done when the majority of weeds have germinated, but before weed competition reduces yield.

## **Rates of use**

Apply LUTIMOR at 0.55 - 1.1 litres per hectare. The dose rate of LUTIMOR depends on target grass species and season.

## **WEED CONTROL**

### **Winter and spring wheat and winter and spring barley**

**Wild oats** – apply 0.82 litres per hectare LUTIMOR from 1st leaf unfolded to flag leaf ligule visible.

**Italian rye-grass and perennial rye-grass (from seed)** – apply 0.82 litres per hectare LUTIMOR from 1st leaf unfolded to flag leaf ligule visible. Where applications are made to ryegrasses no larger than the 2 tiller stage (GS22) a dose of 0.55 litres per hectare may give acceptable levels of control. Always use as part of a weed control programme including other products active against ryegrasses.

### **Winter and spring barley**

**Black grass** – apply 1.1 litres per hectare LUTIMOR after 1st February up to the 7 tiller stage (GS27). Always use in sequence with other products with different modes of action that are active against blackgrass and as part of an integrated weed control programme. Where resistant biotypes are present control from LUTIMOR will be unacceptable.

## **FOLLOWING CROPS**

There are no restrictions on succeeding crops in a normal rotation. In the event of a crop failure after application of LUTIMOR, 4 weeks should elapse after application before ryegrass, maize, oats or broad-leaved crops are planted as replacement crops.

## **MIXING AND SPRAYING**

### **Mixing Procedure**

Make sure the sprayer is set to give an even application at the correct volume. Fill the spray tank with half the required volume of water and begin agitation. Add the required amount of LUTIMOR to the spray tank and mix thoroughly. Add the rest of the water and continue to agitate until spraying operation is complete.

### **Spray Quality**

Apply LUTIMOR using a conventional fan nozzle producing a spray quality at the finer end of the medium range as defined by the British Crop Protection Council. A spray pressure of 2-3 bars is recommended.

**Spray Volume**

Spray LUTIMOR in 100 - 400 litres of water per hectare.

**TANK CLEANING PROCEDURE**

Immediately after use, clean the spray equipment thoroughly. Drain the system completely and rinse spray tank, boom and nozzles two to three times with clean water until the foam and all traces of product have been removed.

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**Section 6 of the Health and Safety at Work Act**  
**Additional Product Safety Information (UK Only)**

(This section does not form part of the product label under the Plant Protection Products Regulations 1995.)

The product label provides information on a specific pesticidal use of the product; do not use otherwise, unless you have assessed any potential hazard involved, the safety measures required and that the particular use has 'Extension of Use' approval or is otherwise permitted under the Plant Protection Products Regulations.

The information on this label is based on the best available information including data from test results.

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## **SAFETY DATA SHEET - V2.2**

### **SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

#### **1.1 Product identifier**

Trade name: LUTIMOR

Design code: A21796A

Product Registration Number : MAPP 19856

Unique Formula Identifier (UFI): PWF4-80FT-E00J-CKQ0

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

Use of the Substance/Mixture: Herbicide

Recommended restrictions on use: professional use

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

Company Syngenta UK Ltd  
CPC4, Capital Park,  
Fulbourn, Cambridge  
CB21 5XE

Telephone +44 (0) 1223 883400

Telefax +44 (0) 1223 882195

E-mail address of person responsible for the SDS: [customer.services@syngenta.com](mailto:customer.services@syngenta.com)

#### **1.4 Emergency telephone number**

Emergency telephone number +44 (0) 1484 538444

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### **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)**

Skin irritation, Category 2 - H315: Causes skin irritation.

Skin sensitisation, Sub-category 1A - H317: May cause an allergic skin reaction.

Reproductive toxicity, Category 2 - H361d: Suspected of damaging the unborn child.

Long-term (chronic) aquatic hazard, Category 2 - H411: Toxic to aquatic life with long lasting effects.

#### **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        | H315        | Causes skin irritation.   |
| Statements    | H317        | May cause an allergic skin reaction.  |
|               | H361d       | Suspected of damaging the unborn child.   |
|               | H411        | Toxic to aquatic life with long lasting effects   |
| Precautionary | P201        | Obtain special instructions before use.   |
| Statements    | P261        | Avoid breathing mist or vapours.  |
|               | P264        | Wash skin thoroughly after handling.  |
|               | P280        | Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.   |
|               | P308 + P313 | IF exposed or concerned: Get medical advice/ attention.   |
|               | P391        | Collect spillage.   |
|               | P501        | Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste. |

Hazardous components which must be listed on the label:

- pinoxaden (ISO)
- cloquintocet-mexyl

### 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.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

#### Hazardous components

| Chemical Name                                     | CAS-No.<br>EC-No.<br>Index-No.<br>Registration number     | Classification                               | Concentration<br>(% w/w) |
|---|---|--|--------------------------|
| hydrocarbons, C10-C13, aromatics, <1% naphthalene | Not Assigned<br>922-153-0<br>01-2119451097-39             | Asp. Tox. 1; H304<br>Aquatic Chronic 2; H411 | >= 25 - < 30             |
| 2-methylpentane-2,4-diol                          | 107-41-5<br>203-489-0<br>603-053-00-3<br>01-2119539582-35 | Skin Irrit. 2; H315<br>Eye Irrit. 2; H319    | >= 10 - < 20             |



| Chemical Name      | CAS-No.<br>EC-No.<br>Index-No.<br>Registration number | Classification  | Concentration<br>(% w/w) |
|--------------------|---|---|--------------------------|
| pinoxaden (ISO)    | 243973-20-8<br><br>607-726-00-2                       | Acute Tox. 4; H302<br>Acute Tox. 4; H332<br>Skin Irrit. 2; H315<br>Eye Irrit. 2; H319<br>Skin Sens. 1A; H317<br>Repr. 2 ; H361d<br>STOT SE 3; H335<br>Aquatic Acute 1 ;H400<br>Aquatic Chronic 3;H412<br>M-Factor (Acute aquatic toxicity): 1<br>M-Factor (Chronic aquatic toxicity): 1 | >= 3 - < 10              |
| cloquintocet-mexyl | 99607-70-2<br>01-2119381871-32                        | Acute Tox. 4; H332<br>Skin Sens. 1; H317<br>STOT RE 2; H373<br>Aquatic Acute 1; H400<br>Aquatic Chronic 1; H410<br>M-Factor (Acute aquatic toxicity): 1<br>M-Factor (Chronic aquatic toxicity): 1   | >= 1 - < 2.5             |
| naphthalene        | 91-20-3 202-049-5<br>601-052-00-2                     | Flam. Sol. 2; H228<br>Acute Tox. 4; H302<br>Carc. 2; H351<br>Aquatic Acute 1; H400<br>Aquatic Chronic 1; H410   | >= 0.25 - < 1            |

For explanation of abbreviations see section 16.

## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

**General advice:** Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number, a poison control centre 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.

#### **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.

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### **SECTION 5. FIRE-FIGHTING 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

Use alcohol-resistant foam or water spray.

Unsuitable extinguishing media:

Do not use a solid water stream as it may scatter and spread fire.

#### **5.2 Specific hazards arising from the substance or mixture**

**Specific hazards during firefighting:** 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.

#### **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.

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### **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.

#### **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 materials 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.

### 6.4 Reference to other sections

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

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## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

**Advice on safe handling:** No special protective measures against fire required. Avoid contact with skin and eyes. When using, do not eat, drink or smoke. For personal protection see section 8.

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

**Requirements for storage areas and containers:** No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

### 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.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Occupational Exposure Limits

| Components  | CAS-No.                         | Value type<br>(Form of exposure) | Control parameters              | Basis      |
|---|---------------------------------|----------------------------------|---------------------------------|------------|
| hydrocarbons, C10-C13, aromatics, <1% naphthalene | Not Assigned                    | TWA                              | 8 ppm<br>50 mg/m <sup>3</sup>   | Supplier   |
| 2-methylpentane-2,4-diol                          | 107-41-5                        | TWA                              | 25 ppm<br>123 mg/m <sup>3</sup> | GB EH40    |
|   | 107-41-5                        | STEL                             | 25 ppm<br>123 mg/m <sup>3</sup> | GB EH40    |
| pinoxaden (ISO)                                   | 243973-20-8                     | TLV-C                            | 0.1 mg/m <sup>3</sup>           | Syngenta   |
| cloquintocet-mexyl                                | 99607-70-2                      | TWA                              | 5 mg/m <sup>3</sup>             | Syngenta   |
| naphthalene                                       | 91-20-3                         | TWA                              | 10 ppm<br>50 mg/m <sup>3</sup>  | 91/322/EEC |
|   | Further information: Indicative |                                  |                                 |            |

## Biological occupational exposure limits

| Components  | CAS-No. | Control parameters                             | Sampling time | Basis          |
|-------------|---------|--|---------------|----------------|
| naphthalene | 91-20-3 | 1-hydroxypyrene: 4 µmol/mol creatinine (Urine) | After shift   | GB EH40<br>BAT |

### Derived No Effect Level (DNEL):

| Substance name               | End Use   | Exposure routes | Potential health effects           | Value                      |                        |
|------------------------------|---|-----------------|------------------------------------|----------------------------|------------------------|
| tris(2-ethylhexyl) phosphate | Workers   | Inhalation      | Long-term systemic effects         | 350 mg/m <sup>3</sup>      |                        |
|                              | Workers   | Inhalation      | Acute systemic effects             | 2800 mg/m <sup>3</sup>     |                        |
|                              | Workers   | Dermal          | Long-term systemic effects         | 50 mg/kg                   |                        |
|                              | Workers   | Dermal          | Acute systemic effects             | 40 mg/kg                   |                        |
|                              | Consumers   | Dermal          | Acute systemic effects             | 200 mg/kg                  |                        |
|                              | Consumers   | Dermal          | Long-term systemic effects         | 25 mg/kg                   |                        |
|                              | Consumers   | Inhalation      | Acute systemic effects             | 500 mg/m <sup>3</sup>      |                        |
|                              | Consumers   | Inhalation      | Long-term systemic effects         | 62.5 mg/m <sup>3</sup>     |                        |
|                              | Consumers   | Oral            | Acute systemic effects             | 200 mg/kg                  |                        |
|                              | Consumers   | Oral            | Long-term systemic effects         | 25 mg/kg                   |                        |
| 2-methylpentane-2,4-diol     | Workers   | Inhalation      | Short-term exposure, Local effects | 98 mg/m <sup>3</sup>       |                        |
|                              | Workers   | Inhalation      | Long-term systemic effects         | 14 mg/m <sup>3</sup>       |                        |
|                              | Workers   | Inhalation      | Long-term local effects            | 49 mg/m <sup>3</sup>       |                        |
|                              | Workers   | Dermal          | Long-term systemic effects         | 2 mg/kg                    |                        |
|                              | Consumers   | Inhalation      | Short-term exposure, Local effects | 49 mg/m <sup>3</sup>       |                        |
|                              | Consumers   | Inhalation      | Long-term systemic effects         | 3.5 mg/m <sup>3</sup>      |                        |
|                              | Consumers   | Inhalation      | Long-term local effects            | 25 mg/m <sup>3</sup>       |                        |
|                              | Consumers   | Oral            | Long-term systemic effects         | 1 mg/kg                    |                        |
|                              | Consumers   | Dermal          | Long-term systemic effects         | 1 mg/kg                    |                        |
|                              | hydrocarbons, C10-C13, aromatics, <1% naphthalene | Workers         | Inhalation                         | Long-term systemic effects | 151 mg/m <sup>3</sup>  |
| Workers                      |   | Dermal          | Long-term systemic effects         | 12.5 mg/kg                 |                        |
| 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                  |                        |
| castor oil, ethoxylated      |   | Workers         | Inhalation                         | Long-term systemic effects | 16.4 mg/m <sup>3</sup> |
|                              |   | Workers         | Dermal                             | Long-term systemic effects | 4.67 mg/kg bw/day      |

| Substance name     | End Use        | Exposure routes | Potential health effects             | Value                   |
|--------------------|----------------|-----------------|--------------------------------------|-------------------------|
|                    | Consumers      | Inhalation      | Long-term systemic effects           | 2.9 mg/m <sup>3</sup>   |
|                    | Consumers      | Dermal          | Long-term systemic effects           | 1.67 mg/kg bw/day       |
|                    | Consumers      | Oral            | Long-term systemic effects           | 1.67 mg/kg bw/day       |
| cloquintocet-mexyl | Industrial use | Dermal          | Long-term exposure, Systemic effects | 3.33 mg/kg              |
|                    | Industrial use | Inhalation      | Long-term exposure, Systemic effects | 0.303 mg/m <sup>3</sup> |
| naphthalene        | Workers        | Inhalation      | Long-term systemic effects           | 25 mg/m <sup>3</sup>    |
|                    | Workers        | Inhalation      | Long-term local effects              | 25 mg/m <sup>3</sup>    |
|                    | Workers        | Dermal          | Long-term systemic effects           | 3.57 mg/kg              |

#### Predicted No Effect Concentration (PNEC):

| Substance name               | Environmental Compartment | Value                           |
|------------------------------|---------------------------|---------------------------------|
| tris(2-ethylhexyl) phosphate | Sewage treatment plant    | 1 mg/l                          |
| 2-methylpentane-2,4-diol     | Fresh water               | 0.429 mg/l                      |
|                              | Marine water              | 0.0429 mg/l                     |
|                              | Fresh water sediment      | 1.79 mg/kg                      |
|                              | Marine sediment           | 0.179 mg/kg                     |
|                              | Soil                      | 0.11 mg/kg                      |
| castor oil, ethoxylated      | Fresh water sediment      | 0.0129 mg/kg dry weight (d.w.)  |
|                              | Marine sediment           | 0.00129 mg/kg dry weight (d.w.) |
|                              | Soil                      | 0.00258 mg/kg dry weight (d.w.) |
| cloquintocet-mexyl           | Fresh water               | 0.0018 mg/l                     |
|                              | Fresh water sediment      | 0.934 mg/kg dry weight (d.w.)   |
|                              | Marine water              | 0.00018 mg/l                    |
|                              | Marine sediment           | 0.0934 mg/kg dry weight (d.w.)  |
|                              | Soil                      | 0.463 mg/kg dry weight (d.w.)   |
| naphthalene                  | Fresh water               | 0.0024 mg/l                     |
|                              | Marine water              | 0.0024 mg/l                     |
|                              | Sewage treatment plant    | 2.9 mg/l                        |
|                              | Fresh water sediment      | 0.0672 mg/kg                    |
|                              | Marine sediment           | 0.0672 mg/kg                    |
|                              | Soil                      | 0.0533 mg/kg                    |

## 8.2 Exposure controls

### Engineering measures

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.

### Personal protective equipment

**Eye protection** : No special protective equipment required.

#### 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.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|                              |                                   |
|------------------------------|-----------------------------------|
| Appearance:                  | clear to opalescent               |
| Colour:                      | light yellow                      |
| Odour:                       | aromatic                          |
| Odour Threshold:             | No data available                 |
| pH:                          | 3 - 7                             |
|                              | Concentration: 1 % w/v            |
| Melting point/range:         | No data available                 |
| Boiling point/boiling range: | No data available                 |
| Flash point:                 | 104 °C                            |
|                              | Method: Pensky-Martens closed cup |

|  |  |
|--|--|
| Evaporation rate:                                    | No data available  |
| Flammability (solid, gas):                           | No data available  |
| Upper explosion limit /<br>Upper flammability limit: | No data available  |
| Lower explosion limit /<br>Lower flammability limit: | No data available  |
| Vapour pressure:                                     | No data available  |
| Relative vapour density:                             | No data available  |
| Density:   | 0.95 - 0.99 g/cm <sup>3</sup> (20 °C)                    |
| Solubility(ies)                                      |  |
| Solubility in other solvents:                        | No data available  |
| Partition coefficient: n-octanol/water:              | No data available  |
| Auto-ignition temperature:                           | approximately 370 °C                                     |
| Decomposition temperature:                           | No data available  |
| Viscosity  |  |
| Viscosity, kinematic:                                | 22.7 mm <sup>2</sup> /s (40 °C)                          |
| Explosive properties:                                | No data available  |
| Oxidizing properties:                                | The substance or mixture is not classified as oxidizing. |

## 9.2 Other Information

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

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

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

##### Product:

Acute oral toxicity:

LD50 (Rat, female): > 2,000 mg/kg

Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity:                    Remarks: Based on data from similar materials  
LD50 (Rat, male and female): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

**Components:**

**2-methylpentane-2,4-diol:**

Acute oral toxicity:                    LD50 Oral (Rat): 2,000 mg/kg  
Acute dermal toxicity:                LD50 Dermal (Rat): 2,000 mg/kg  
**pinoxaden (ISO):**  
Acute oral toxicity:                    LD50 (Rat, male and female): > 5,000 mg/kg  
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

Acute inhalation toxicity:            LC50 (Rat, male): 4.63 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Acute toxicity estimate: 4.63 mg/l  
Test atmosphere: dust/mist  
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

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

**cloquintocet-mexyl:**

Acute oral toxicity:                    LD50 (Rat, male and female): > 5,000 mg/kg  
Acute inhalation toxicity:            LC50 (Rat, male and female): > 0.935 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The component/mixture is moderately toxic after short term inhalation.

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

**naphthalene:**

Acute oral toxicity:                    Assessment: The component/mixture is moderately toxic after single ingestion.

**Skin corrosion/irritation**

**Product:**

Species: Rabbit  
Result: Irritating to skin.  
Remarks : Based on data from similar materials.  
Result : Repeated exposure may cause skin dryness or cracking.

**Components:**

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

Result : Repeated exposure may cause skin dryness or cracking.



**2-methylpentane-2,4-diol:**

Species: Rabbit

Result: Irritating to skin.

**pinoxaden (ISO):**

Method: Based on Human Evidence

Result: Irritating to skin.

**cloquintocet-mexyl:**

Species: Rabbit

Result: No skin irritation

**Serious eye damage/eye irritation****Product:**

Species: Rabbit

Result: No eye irritation

Remarks: Based on data from similar materials

**Components:****2-methylpentane-2,4-diol:**

Species: Rabbit

Result: Irritation to eyes, reversing within 21 days

**pinoxaden (ISO):**

Species: Rabbit

Result: Irritation to eyes, reversing within 21 days

**cloquintocet-mexyl:**

Species: Rabbit

Result: No eye irritation

**Respiratory or skin sensitisation****Product:**

Test Type: Buehler Test

Species: Guinea pig

Result: The product is a skin sensitiser, sub-category 1A.

Remarks: Based on data from similar materials

**Components:****pinoxaden (ISO):**

Test Type: mouse lymphoma cells

Species: Mouse

Result: The product is a skin sensitiser, sub-category 1A.

Test Type: Respiratory sensitisation

Result: Does not cause respiratory sensitisation.

Remarks: Experience with human exposure

**cloquintocet-mexyl:**

Species: Guinea pig

Result: May cause sensitisation by skin contact.

## **Germ cell mutagenicity**

### **Components:**

#### **2-methylpentane-2,4-diol:**

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

#### **pinoxaden (ISO):**

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

#### **cloquintocet-mexyl:**

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

## **Carcinogenicity**

### **Components:**

#### **2-methylpentane-2,4-diol:**

Carcinogenicity - Assessment: Weight of evidence does not support classification as a carcinogen

#### **pinoxaden (ISO):**

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

#### **cloquintocet-mexyl:**

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

#### **naphthalene:**

Carcinogenicity - Assessment: Limited evidence of carcinogenicity in animal studies.

## **Reproductive toxicity**

### **Components:**

#### **2-methylpentane-2,4-diol:**

Reproductive toxicity - Assessment: No toxicity to reproduction

#### **pinoxaden (ISO):**

Reproductive toxicity - Assessment: No toxicity to reproduction

#### **cloquintocet-mexyl:**

Reproductive toxicity - Assessment: No toxicity to reproduction

## **STOT - single exposure**

### **Components:**

#### **pinoxaden (ISO):**

Assessment: Based on Human Evidence, The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. Remarks: Breathing difficulties Cough Acute irritation of the respiratory system leading to tightness of the chest and an asthmatic condition.

#### **cloquintocet-mexyl:**

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

## **STOT - repeated exposure**

### **Components:**

#### **pinoxaden (ISO):**

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

**cloquintocet-mexyl:**

Target Organs : Urinary system, Liver

Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

**Aspiration toxicity****Components:****Solvent naphtha (petroleum), heavy arom.; Kerosine – unspecified:**

May be fatal if swallowed and enters airways.

---

**SECTION 12. ECOLOGICAL INFORMATION****12.1 Toxicity****Product:**

|  |  |
|--|--|
| Toxicity to fish:                                    | LC50 ( <i>Oncorhynchus mykiss</i> (rainbow trout)): 19 mg/l<br>Exposure time: 96 h<br>Remarks: Based on data from similar materials.   |
| Toxicity to daphnia and other aquatic invertebrates: | EC50 ( <i>Daphnia magna</i> (Water flea)): 1.8 mg/l<br>Exposure time: 48 h<br>Remarks: Based on data from similar materials.   |
| Toxicity to algae/aquatic plants:                    | ErC50 ( <i>Pseudokirchneriella subcapitata</i> (green algae)): 32 mg/l<br>Exposure time: 72 h<br>Remarks: Based on data from similar materials.<br>NOEC ( <i>Pseudokirchneriella subcapitata</i> (green algae)): 5.5 mg/l<br>End point: Growth rate<br>Exposure time: 72 h<br>Remarks: Based on data from similar materials. |

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

|  |  |
|--|--|
| Toxicity to fish :                                   | LL50 ( <i>Oncorhynchus mykiss</i> (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 ( <i>Daphnia magna</i> (Water flea)): 1.1 mg/l<br>Exposure time: 48 h<br>Remarks: Information given is based on data obtained from similar substances.          |
| Toxicity to algae/aquatic plants:                    | EL50 ( <i>Raphidocelis subcapitata</i> (freshwater green algae)): 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.

#### **pinoxaden (ISO):**

Toxicity to fish: LC50 (*Oncorhynchus mykiss* (rainbow trout)): 10.3 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (*Daphnia magna* (Water flea)): 52 mg/l  
Exposure time: 48 h

Toxicity to algae: ErC50 (*Raphidocelis subcapitata* (freshwater green alga)): 3.6 mg/l  
Exposure time: 72 h  
ErC50 (*Skeletonema costatum* (marine diatom)): 1.72 mg/l  
Exposure time: 72 h  
NOEC (*Skeletonema costatum* (marine diatom)): 0.94 mg/l  
End point: Growth rate  
Exposure time: 96 h  
NOEC (*Lemna gibba* (gibbous duckweed)): 0.73 mg/l  
End point: Growth rate  
Exposure time: 7 d

M-Factor

(Acute aquatic toxicity): 1

Toxicity to fish (Chronic toxicity): NOEC: 6.6 mg/l  
Exposure time: 28 d  
Species: *Oncorhynchus mykiss* (rainbow trout)

#### **cloquintocet-mexyl:**

Toxicity to fish: LC50 (*Oncorhynchus mykiss* (rainbow trout)): > 0.97 mg/l  
Exposure time: 96 h  
LC50 (*Gobiocypris rarus* (rare gudgeon)): 0.102 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (*Daphnia magna* (Water flea)): > 0.82 mg/l  
Exposure time: 48 h

|   |  |
|---|--|
| Toxicity to algae:  | ErC50 ( <i>Desmodesmus subspicatus</i> (green algae)):<br>> 2.2 mg/l<br>Exposure time: 72 h<br>NOEC ( <i>Desmodesmus subspicatus</i> (green algae)):<br>0.12 mg/l<br>End point: Growth rate<br>Exposure time: 72 h |
| M-Factor (Acute aquatic toxicity):                                      | 1  |
| Toxicity to microorganisms:   | EC50 (activated sludge): > 1,000 mg/l<br>Exposure time: 3 h  |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): | NOEC: > 0.437 mg/l<br>Exposure time: 21 d<br>Species: Daphnia (water flea)   |

#### **naphthalene:**

#### **Ecotoxicology Assessment**

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

### **12.2 Persistence and degradability**

#### **Components:**

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

Biodegradability : Result: Readily biodegradable.

#### **2-methylpentane-2,4-diol:**

Biodegradability: Result: Readily biodegradable.

#### **pinoxaden (ISO):**

Biodegradability: Result: rapidly degradable

Stability in water: Degradation half life: 0.3 d

Remarks: Product is not persistent.

#### **cloquintocet-mexyl:**

Biodegradability: Result: Not readily biodegradable.

Stability in water: Degradation half life: 0.4 d

Remarks: Product is not persistent.

### **12.3 Bioaccumulative potential**

#### **Components:**

#### **pinoxaden (ISO):**

Bioaccumulation: Remarks: Low bioaccumulation potential.

#### **cloquintocet-mexyl:**

Bioaccumulation: Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water: log Pow: 5.24 (25 °C)

## 12.4 Mobility in soil

### Components:

#### **pinoxaden (ISO):**

Distribution among environmental compartments: Remarks: Moderately mobile in soils

Stability in soil: Dissipation time: 0.1 - 1.8 d

Percentage dissipation: 50 % (DT50)

Remarks: Product is not persistent.

#### **cloquintocet-mexyl:**

Distribution among environmental compartments: Remarks: immobile

Stability in soil: Dissipation time: 2.4 d

Percentage dissipation: 50 % (DT50)

Remarks: Product is not persistent.

## 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:

#### **2-methylpentane-2,4-diol:**

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

#### **pinoxaden (ISO):**

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

#### **cloquintocet-mexyl:**

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

#### **naphthalene:**

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

## 12.6 Other adverse effects

No data available

---

## **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.

**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.  
(CLOQUINTOCET-MEXYL AND SOLVENT NAPHTHA)

**RID :** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(CLOQUINTOCET-MEXYL AND SOLVENT NAPHTHA)

**IMDG:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(CLOQUINTOCET-MEXYL AND SOLVENT NAPHTHA)

**IATA :** Environmentally hazardous substance, liquid, n.o.s.  
(CLOQUINTOCET-MEXYL AND SOLVENT NAPHTHA)

### **14.3 Transport hazard class(es)**

**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 : (-)

#### **RID**

Packing group : III

Classification Code : M6

Hazard Identification Number : 90

Labels : 9

## **IMDG**

Packing group : III

Labels : 9

EmS Code : F-A, S-F

### **IATA (Cargo)**

Packing instruction (cargo aircraft): 964

Packing instruction (LQ): Y964

Packing group: III

Labels: Class 9 - Miscellaneous dangerous substances and articles

### **IATA (Passenger)**

Packing instruction (passenger aircraft): 964

Packing instruction (LQ): Y964

Packing group: III

Labels: Class 9 - Miscellaneous dangerous substances and articles

## **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

## **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 73/78 and the IBC Code**

Not applicable for product as supplied.

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## **SECTION 15. REGULATORY INFORMATION**

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

Relevant EU provisions transposed through retained EU law

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII): Conditions of restriction for the following entries should be considered: Number on list 3

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable



Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable  
Regulation (EU) 2019/1021 on persistent organic pollutants (recast): naphthalene  
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  
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

|                          |                     |                     |
|--------------------------|---------------------|---------------------|
| E2 ENVIRONMENTAL HAZARDS | Quantity 1<br>200 t | Quantity 2<br>500 t |
|--------------------------|---------------------|---------------------|

### **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**

- H228: Flammable solid.
- H302: Harmful if swallowed.
- H304: May be fatal if swallowed and enters airways.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H319: Causes serious eye irritation.
- H332: Harmful if inhaled.
- H335: May cause respiratory irritation.
- H351: Suspected of causing cancer.
- H361d: Suspected of damaging the unborn child.
- H373: May cause damage to organs through prolonged or repeated exposure.
- 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**

- Acute Tox.: Acute toxicity
- Aquatic Acute: Acute aquatic toxicity
- Aquatic Chronic: Chronic aquatic toxicity
- Asp. Tox.: Aspiration hazard
- Carc.: Carcinogenicity
- Eye Irrit.: Eye irritation
- Flam. Sol.: Flammable solids
- Repr. : Reproductive toxicity
- Skin Irrit.: Skin irritation
- Skin Sens.: Skin sensitisation

|                   |   |
|-------------------|---|
| STOT RE:          | Specific target organ toxicity - repeated exposure                              |
| STOT SE:          | Specific target organ toxicity - single exposure                                |
| 91/322/EEC:       | Europe. Commission Directive 91/322/EEC on establishing indicative limit values |
| GB EH40:          | UK. EH40 WEL - Workplace Exposure Limits  |
| GB EH40 BAT :     | UK. Biological monitoring guidance values                                       |
| 91/322/EEC / TWA: | Limit Value - eight hours   |
| GB EH40 / TWA:    | Long-term exposure limit (8-hour TWA reference period)                          |
| GB EH40 / STEL:   | Short-term exposure limit (15-minute reference period)                          |

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; 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 Harmonized 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; IECS - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; 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 Chemicals; OECD - Organization 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information****Classification of the mixture:**

|                   |       |
|-------------------|-------|
| Skin Irrit. 2     | H315  |
| Skin Sens. 1A     | H317  |
| Repr. 2           | H361d |
| Aquatic Chronic 2 | H411  |

**Classification procedure:**

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

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.



