

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



## OLUPAL

Version	Revision Date:	SDS Number:	Date of last issue: 16.08.2023
2.0	18.10.2024	S00054370690	Date of first issue: 16.08.2023

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

#### 1.1 Product identifier

Trade name : OLUPAL

Design code : A21796A

Product Registration Number : MAPP19849

Unique Formula Identifier (UFI) : N1M4-J0KV-4009-3YP3

#### 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 : 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)

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.

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### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements :

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H361d	Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements :

**Prevention:**

P201	Obtain special instructions before use.
P261	Avoid breathing mist or vapours.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

**Response:**

P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.

**Disposal:**

P501	Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.
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#### Hazardous components which must be listed on the label:

2-methylpentane-2,4-diol  
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.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

##### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
hydrocarbons, C10-C13, aromatics, <1% naphthalene	Not Assigned  01-2119451097-39-xxxx	Asp. Tox. 1; H304 Aquatic Chronic 2; H411 EUH066	>= 25 - < 30
2-methylpentane-2,4-diol	107-41-5 203-489-0 603-053-00-3 01-2119539582-35-xxxx	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Repr. 2; H361d	>= 10 - < 20
pinoxaden (ISO)	243973-20-8  607-726-00-2	Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1A; H317 Repr. 2; H361d STOT SE 3; H335 (Respiratory system) Aquatic Acute 1; H400 Aquatic Chronic 3; H412  M-Factor (Acute aquatic toxicity): 1  Acute toxicity estimate  Acute oral toxicity: 500 mg/kg Acute inhalation toxicity (dust/mist): 4.63 mg/l	>= 3 - < 10
cloquintocet-mexyl	99607-70-2  01-2119381871-32-xxxx	Acute Tox. 4; H332 Skin Sens. 1; H317 STOT RE 2; H373 (Urinary system, Liver) Aquatic Acute 1;	>= 1 - < 2.5

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		H400 Aquatic Chronic 1; H410	
		M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	
naphthalene	91-20-3 202-049-5 601-052-00-2	Flam. Sol. 2; H228 Acute Tox. 4; H302 Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	$\geq 0.25 - < 1$

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 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.

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

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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  
or  
Water spray

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.

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

#### 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.

#### 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.

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### 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.

### 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 : 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.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

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

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	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
	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>

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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) according to Regulation (EC) No. 1907/2006

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/face protection : No special protective equipment required.  
Hand protection

Material : Nitrile rubber

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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. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

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.

### Environmental exposure controls

Water : 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.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state : clear to opalescent

Colour : light yellow

Odour : aromatic

Odour Threshold : No data available

Melting point/freezing point : No data available

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Initial boiling point and boiling range : 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

Flash point : 104 °C  
Method: Pensky-Martens closed cup

Auto-ignition temperature : 370 °C

Decomposition temperature : No data available

pH : 3 - 7  
Concentration: 1 %w/v

Viscosity  
Viscosity, kinematic : 22.7 mm<sup>2</sup>/s (40 °C)

Solubility(ies)  
Water solubility : No data available  
Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Vapour pressure : No data available

Density : 0.95 - 0.99 g/cm<sup>3</sup> (20 °C)

Relative vapour density : No data available

Particle characteristics  
Particle size : No data available

### 9.2 Other information

Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Evaporation rate : No data available

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### 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

No hazardous decomposition products are known.

### SECTION 11: Toxicological information

#### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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  
Remarks: Based on data from similar materials

Acute inhalation toxicity : Acute toxicity estimate: > 5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

Acute dermal toxicity : 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 (Rat, male and female): > 2,000 mg/kg

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Assessment: The substance or mixture has no acute oral toxicity

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

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

Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

Acute toxicity estimate: 500 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.  
Remarks: Highest attainable concentration

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

### **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

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### 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

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### Components:

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

Test Type : Local lymph node assay (LLNA)  
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

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### Reproductive toxicity

#### Components:

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

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

##### **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:

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

May be fatal if swallowed and enters airways.

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### 11.2 Information on other hazards

#### Endocrine disrupting properties

##### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 12: Ecological information

### 12.1 Toxicity

##### Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 19 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.8 mg/l  
Exposure time: 48 h  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 32 mg/l  
Exposure time: 72 h  
Remarks: Based on data from similar materials

NOEC (Raphidocelis subcapitata (freshwater green alga)): 5.5 mg/l  
End point: Growth rate  
Exposure time: 72 h  
Remarks: Based on data from similar materials

##### Components:

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

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 3.6 mg/l  
Exposure time: 96 h  
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  
Exposure time: 48 h  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : EL50 (Raphidocelis subcapitata (freshwater green alga)): 7.9 mg/l  
End point: Growth rate

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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

LC50 (Americamysis): 4.7 mg/l  
Exposure time: 96 h

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 2.39 mg/l  
Exposure time: 72 h

EC10 (Raphidocelis subcapitata (freshwater green alga)): 0.601 mg/l  
End point: Growth rate  
Exposure time: 72 h

ErC50 (Glyceria maxima (reed sweet grass)): 0.498 mg/l  
Exposure time: 14 d

EC10 (Glyceria maxima (reed sweet grass)): 0.0239 mg/l  
End point: Growth rate  
Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC: 3.2 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

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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/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 2.2 mg/l  
Exposure time: 72 h

NOEC (Desmodesmus subspicatus (green algae)): 0.12 mg/l  
End point: Growth rate  
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: > 0.437 mg/l  
Exposure time: 21 d  
Species: Daphnia (water flea)

M-Factor (Chronic aquatic toxicity) : 1

### 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: Not readily biodegradable.

Stability in water : Degradation half life: 0.1 d  
Remarks: Product is not persistent.

#### cloquintocet-mexyl:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 0.4 d

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Remarks: Product is not persistent.

### 12.3 Bioaccumulative potential

#### Components:

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

Bioaccumulation : Bioconcentration factor (BCF): 1.17  
Remarks: Low bioaccumulation potential.

Partition coefficient: n-octanol/water : log Pow: 3.2 (25 °C)

##### **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: 0.4 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 : Substance is not persistent, bioaccumulative, and toxic (PBT).. Substance is not very persistent and very bioaccumulative (vPvB).

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

Assessment : Substance is not persistent, bioaccumulative, and toxic

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(PBT).. Substance is not very persistent and very bioaccumulative (vPvB).

### cloquintocet-mexyl:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT).. Substance is not very persistent and very bioaccumulative (vPvB).

### naphthalene:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT).. Substance is not very persistent and very bioaccumulative (vPvB).

## 12.6 Endocrine disrupting properties

### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7 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.

Waste Code : uncleaned packagings  
15 01 10, packaging containing residues of or contaminated by hazardous substances

## SECTION 14: Transport information

### 14.1 UN number or ID number

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**ADN** : UN 3082  
**ADR** : UN 3082  
**RID** : UN 3082  
**IMDG** : UN 3082  
**IATA** : UN 3082

### 14.2 UN proper shipping name

**ADN** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(CLOQUINTOCET-MEXYL, SOLVENT NAPHTHA)  
**ADR** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(CLOQUINTOCET-MEXYL, SOLVENT NAPHTHA)  
**RID** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(CLOQUINTOCET-MEXYL, SOLVENT NAPHTHA)  
**IMDG** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(CLOQUINTOCET-MEXYL, SOLVENT NAPHTHA)  
**IATA** : Environmentally hazardous substance, liquid, n.o.s.  
(CLOQUINTOCET-MEXYL, SOLVENT NAPHTHA)

### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
<b>ADN</b>	: 9	
<b>ADR</b>	: 9	
<b>RID</b>	: 9	
<b>IMDG</b>	: 9	
<b>IATA</b>	: 9	

### 14.4 Packing group

**ADN**  
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.

**ADR**  
Packing group : III  
Classification Code : M6  
Hazard Identification Number : 90

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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.

### 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

### ADN

Environmentally hazardous : yes

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### 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 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

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

Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.

Banned and/or restricted

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : 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

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### Other regulations:

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

### 15.2 Chemical safety assessment

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

## 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.
EUH066	: Repeated exposure may cause skin dryness or cracking.

### Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
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

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; Regula-

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tion (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; IECSC - 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; TECI - Thailand Existing Chemicals 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

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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