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

1.1 Product identifier
   Trade name : TRAXOS
   Design code : A13833B
   Product Registration Number : MAPP 12742

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Use of the Substance/Mixture : Herbicide

1.3 Details of the supplier of the safety data sheet
   Company : Syngenta UK Limited
              CPC4, Capital Park
              Fulbourn, Cambridge CB21 5XE
              United Kingdom
   Telephone : +44 (0) 1223 883400
   Telefax : +44 (0) 1223 882195
   E-mail address of person responsible for the SDS : customer.services@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)
   Eye irritation, Category 2 : H319: Causes serious eye irritation.
   Skin sensitisation, Category 1 : H317: May cause an allergic skin reaction.
   Reproductive toxicity, Category 1B : H360Df: May damage the unborn child. Suspected of damaging fertility.
   Aspiration hazard, Category 1 : H304: May be fatal if swallowed and enters airways.
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)

Hazard pictograms:

- !: Danger
- : 
- : 
- : 

Signal word: Danger

Hazard statements:

- H304: May be fatal if swallowed and enters airways.
- H317: May cause an allergic skin reaction.
- H319: Causes serious eye irritation.
- H360Df: May damage the unborn child. Suspected of damaging fertility.
- H411: Toxic to aquatic life with long lasting effects.

Precautionary statements:

- P102: Keep out of reach of children.

Prevention:

- P201: Obtain special instructions before use.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

- P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
- P308 + P313: IF exposed or concerned: Get medical advice/ attention.
- P331: Do NOT induce vomiting.
- P391: Collect spillage.

Disposal:

- 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.

Additional Labelling

Restricted to professional users.

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

**Components**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified</td>
<td>64742-94-5 265-198-5 649-424-00-3 01-2119451151-53</td>
<td>265-198-5 649-424-00-3 01-2119451151-53</td>
<td>Asp. Tox. 1; H304 Aquatic Chronic 2; H411</td>
<td>&gt;= 50 - &lt; 70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tetrahydro-2-furylethanol</td>
<td>97-99-4 202-625-6 603-061-00-7 01-2119968921-26</td>
<td>202-625-6 603-061-00-7 01-2119968921-26</td>
<td>Eye Irrit. 2; H319 Rep. 1B; H360Df</td>
<td>&gt;= 20 - &lt; 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>clodinafop-propargyl (ISO)</td>
<td>105512-06-9 607-625-00-3</td>
<td>105512-06-9 607-625-00-3</td>
<td>Acute Tox. 4; H302 Skin Sens. 1; H317 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 2.5 - &lt; 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>binoxaden</td>
<td>243973-20-8</td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4; H332 Skin Irr. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1A; H317 STOT SE 3; H335 Aquatic Chronic 3; H412</td>
<td>&gt;= 2.5 - &lt; 10</td>
</tr>
<tr>
<td>cloquintocet-mexyl</td>
<td>99607-70-2 01-2119381871-32</td>
<td>99607-70-2 01-2119381871-32</td>
<td>Acute Tox. 4; H332 Skin Sens. 1; H317 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 1 - &lt; 2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>naphthalene</td>
<td>91-20-3 202-049-5 601-052-00-2</td>
<td>91-20-3 202-049-5 601-052-00-2</td>
<td>Flam. Sol. 2; H228 Acute Tox. 4; H302 Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 0.25 - &lt; 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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
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 firefighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous prod-
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.

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**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified</td>
<td>64742-94-5</td>
<td>TWA</td>
<td>8 ppm 50 mg/m3</td>
<td>Supplier</td>
</tr>
</tbody>
</table>

**Further information**: Substances used as active ingredients in pesticides are listed under their systematic chemical names and/or their (ISO) common names. These may sometimes be used as parts of the names of proprietary pesticide formulations. In all cases, the exposure limit applies to the specific active ingredient in the workplace atmosphere and not the formulation as a whole.

**pinoxaden**

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>243973-20-8</td>
<td>TLV-C</td>
<td>0.1 mg/m3</td>
<td>Syngenta</td>
</tr>
</tbody>
</table>

**Further information**: Substances used as active ingredients in pesticides are listed under their systematic chemical names and/or their (ISO) common names. These may sometimes be used as parts of the names of proprietary pesticide formulations. In all cases, the exposure limit applies to the specific active ingredient in the workplace atmosphere and not the formulation as a whole.

**clodinafop-propargyl (ISO)**

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>105512-06-9</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Syngenta</td>
</tr>
</tbody>
</table>

**Further information**: Substances used as active ingredients in pesticides are listed under their systematic chemical names and/or their (ISO) common names. These may sometimes be used as parts of the names of proprietary pesticide formulations. In all cases, the exposure limit applies to the specific active ingredient in the workplace atmosphere and not the formulation as a whole.

**cloquintocet-mexyl**

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>naphthalene</td>
<td>Industrial use</td>
<td>Dermal</td>
<td>Long-term exposure, Systemic effects</td>
<td>3.33 mg/kg</td>
</tr>
<tr>
<td>naphthalene</td>
<td>Industrial use</td>
<td>Inhalation</td>
<td>Long-term exposure, Systemic effects</td>
<td>0.303 mg/m3</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified</td>
<td>Industrial use</td>
<td>Dermal</td>
<td>Long-term systemic effects</td>
<td>12.5 mg/kg</td>
</tr>
</tbody>
</table>
Industrial use | Inhalation | Long-term systemic effects | Value
--- | --- | --- | ---
Consumers | Dermal | Long-term systemic effects | 7.5 mg/kg
Consumers | Oral | Long-term systemic effects | 32 mg/m³
Consumers | Inhalation | Long-term systemic effects | 7.5 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>cloquintocet-mexyl</td>
<td>Fresh water</td>
<td>0.0018 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.934 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.00018 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.0934 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.463 mg/kg dry weight (d.w.)</td>
</tr>
</tbody>
</table>

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**: Tightly fitting safety goggles

Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

Use eye protection according to EN 166.

**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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC 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 workplace. Remove and wash contaminated clothing before re-use. Wear as appropriate: Impervious clothing

Respiratory protection: No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
Appearance: clear, liquid
Colour: yellow to brown
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: 79 °C(1009 hPa)

79 °C
Method: Pensky-Martens closed cup
Evaporation rate: No data available
Flammability (solid, gas): No data available
Section 1: Identification

1.1.1.3 The chemical identification number is: 5908-01-1 (EINECS) and 621-384-8 (ELINCS).

1.2.2 The substance or mixture is classified according to the criteria of Annexes II and III of Directive 67/548/EEC as:

- A flammable liquid (R35);
- A toxic gas (R20/R21);
- An oxidizing substance (R53).  

1.3.3.1 The material is a liquid.

1.4.1.2 The trade name is: TRAXOS.

1.4.2.2 The active ingredient(s) of this product is/are:

<table>
<thead>
<tr>
<th>Active ingredient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

1.5.3 The technical grade of the material is: Synthetische basis.

2:Danger and precautionary statements

2.1.4.1 P210 Keep out of the reach of children.

2.2.3.1 P220 Extinguish fire with foam or dry powder.

2.3.4.1 P260 Do not inhale dust or mists.

2.4.3.1 P373 Wear suitable gloves. 

2.5.4.1 P405 Keep away from heat, sparks, and flame.

3.1.2.1 Other hazards: This material is strongly acidic.

3.2.1.1 Other hazards: This material is a strong base.

4.1.1 The material is a liquid.

4.2.2 The material is a solid.

5.1.1 The material is a liquid.

6.1.1.3 The material is a liquid.

7.1.1.3 The material is a liquid.

8.1.1.3 The material is a liquid.

9.1.1.3 The material is a liquid.

9.2.1.3 The material is a liquid.

Section 9: Physical and chemical properties

9.2.2 The P251 instructions are applicable to the material.

9.2.3 The P252 instructions are applicable to the material.

9.2.4 The P253 instructions are applicable to the material.

9.2.5 The P254 instructions are applicable to the material.

Section 10: Stability and reactivity

10.1.1 The material is stable.

10.1.2 The material is not reactive.

10.1.3 The material is not explosive.

10.2.1 The material is stable.

10.2.2 The material is not reactive.

10.2.3 The material is not explosive.

10.3.1 The P204 instructions are applicable to the material.

10.3.2 The P205 instructions are applicable to the material.

10.3.3 The P206 instructions are applicable to the material.

10.4.1 The P202 instructions are applicable to the material.

10.4.2 The P203 instructions are applicable to the material.

10.5.1 The P207 instructions are applicable to the material.

10.5.2 The P208 instructions are applicable to the material.

10.5.3 The P209 instructions are applicable to the material.

10.5.4 The P210 instructions are applicable to the material.

10.5.5 The P211 instructions are applicable to the material.
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 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

Components:

clodinafop-propargyl (ISO):

Acute oral toxicity: LD50 (Rat, male and female): 1,829 mg/kg

Acute inhalation toxicity: LC50 (Rat, male and female): > 2.325 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

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

pinoxaden:

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

Acute inhalation toxicity: LC50 (Rat, male): 4.63 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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: Mild skin irritation

Components:
clobutinol-propargyl (ISO):
Species: Rabbit
Result: No skin irritation

pinocid:
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: Eye irritation
Components:

tetrahydro-2-furylmethanol:
Result : Eye irritation

clodinafop-propargyl (ISO):
Species : Rabbit
Result : No eye irritation

pinoxaden:
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 : May cause sensitisation by skin contact.

Components:

clodinafop-propargyl (ISO):
Species : Guinea pig
Result : May cause sensitisation by skin contact.

pinoxaden:
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:**

**clodinafop-propargyl (ISO):**
Germ cell mutagenicity - Assessment: Animal testing did not show any mutagenic effects.

**pinoxaden:**
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:**

**clodinafop-propargyl (ISO):**
Carcinogenicity - Assessment: No evidence of carcinogenicity in animal studies.

**pinoxaden:**
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:**

**tetrahydro-2-furylmethanol:**
Reproductive toxicity - Assessment: Clear evidence of adverse effects on development, based on animal experiments. Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

**clodinafop-propargyl (ISO):**
Reproductive toxicity - Assessment: No toxicity to reproduction
pinoxaden:
Reproductive toxicity - Assessment : No toxicity to reproduction

cloquintocet-mexyl:
Reproductive toxicity - Assessment : No toxicity to reproduction

STOT - single exposure

Components:

pinoxaden:
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:

clodinafop-propargyl (ISO):
Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Remarks : Repeated exposure may cause anaemia.

pinoxaden:
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 (Oncorhynchus mykiss (rainbow trout)): 9.3 mg/l
- Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 (Daphnia magna (Water flea)): 5.9 mg/l
- Exposure time: 48 h

**Toxicity to algae**
- ErC50 (Pseudokirchneriella subcapitata (green algae)): 5.7 mg/l
- Exposure time: 72 h
- EbC50 (Pseudokirchneriella subcapitata (green algae)): 2.9 mg/l
- Exposure time: 72 h

**Components:**

*Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified:*

**Ecotoxicology Assessment**

**Chronic aquatic toxicity**
- Toxic to aquatic life with long lasting effects.

**clodinafop-propargyl (ISO):**

**Toxicity to fish**
- LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.21 mg/l
  - Exposure time: 96 h
- LC50 (Oncorhynchus mykiss (rainbow trout)): 0.31 mg/l
  - Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 (Daphnia magna (Water flea)): > 60 mg/l
  - Exposure time: 48 h

**Toxicity to algae**
- ErC50 (Desmodesmus subspicatus (green algae)): > 3.2 mg/l
  - Exposure time: 72 h
- NOEC (Desmodesmus subspicatus (green algae)): 0.24 mg/l
  - Exposure time: 72 h

**M-Factor (Acute aquatic toxicity)**
- 1

**Toxicity to microorganisms**
- EC50 (activated sludge): > 100 mg/l
  - Exposure time: 3 h

**Toxicity to fish (Chronic toxicity)**
- NOEC: 0.024 mg/l
  - Exposure time: 33 d
  - Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):

<table>
<thead>
<tr>
<th>Substance</th>
<th>NOEC</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>pinoxaden</td>
<td>0.23 mg/l</td>
<td>21 d</td>
<td>Daphnia (water flea)</td>
</tr>
<tr>
<td>M-Factor</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Toxicity to fish:

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>pinoxaden</td>
<td>10.3 mg/l</td>
<td>96 h</td>
<td>Oncorhynchus mykiss (rainbow trout)</td>
</tr>
</tbody>
</table>

Toxicity to daphnia and other aquatic invertebrates:

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC50</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>pinoxaden</td>
<td>52 mg/l</td>
<td>48 h</td>
<td>Daphnia magna (Water flea)</td>
</tr>
<tr>
<td></td>
<td>LC50</td>
<td>96 h</td>
<td>Americamysis bahia (Mysid shrimp)</td>
</tr>
</tbody>
</table>

Toxicity to algae:

<table>
<thead>
<tr>
<th>Substance</th>
<th>ErC50</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>pinoxaden</td>
<td>41 mg/l</td>
<td>72 h</td>
<td>Pseudokirchneriella subcapitata (green algae)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skeletonema costatum (marine diatom)</td>
</tr>
<tr>
<td></td>
<td>NOEC</td>
<td>96 h</td>
<td>Lemna gibba (gibbous duckweed)</td>
</tr>
</tbody>
</table>

Toxicity to fish (Chronic toxicity):

<table>
<thead>
<tr>
<th>Substance</th>
<th>NOEC</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>pinoxaden</td>
<td>6.6 mg/l</td>
<td>28 d</td>
<td>Oncorhynchus mykiss (rainbow trout)</td>
</tr>
</tbody>
</table>

cloquintocet-mexyl:

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>cloquintocet-mexyl</td>
<td>&gt; 0.97 mg/l</td>
<td>96 h</td>
<td>Oncorhynchus mykiss (rainbow trout)</td>
</tr>
<tr>
<td></td>
<td>LC50</td>
<td>96 h</td>
<td>Gobiocypris rarus (rare gudgeon)</td>
</tr>
</tbody>
</table>

Toxicity to daphnia and other aquatic invertebrates:

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC50</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>cloquintocet-mexyl</td>
<td>&gt; 0.82 mg/l</td>
<td>48 h</td>
<td>Daphnia magna (Water flea)</td>
</tr>
</tbody>
</table>

Toxicity to algae:

<table>
<thead>
<tr>
<th>Substance</th>
<th>ErC50</th>
<th>Exposure time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>cloquintocet-mexyl</td>
<td>&gt; 2.2 mg/l</td>
<td>72 h</td>
<td>Desmodesmus subspicatus (green algae)</td>
</tr>
<tr>
<td></td>
<td>NOEC</td>
<td>72 h</td>
<td>Desmodesmus subspicatus (green algae)</td>
</tr>
</tbody>
</table>
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:

clodinafop-propargyl (ISO):
Biodegradability : Result: Not readily biodegradable.
Stability in water : Degradation half life: < 1 d (20 °C)
Remarks: Product is not persistent.

pinoxaden:
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:

clodinafop-propargyl (ISO):
Bioaccumulation : Remarks: Does not bioaccumulate.
Partition coefficient: n- : log Pow: 3.9 (25 °C)
## TRAXOS

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>This version replaces all previous versions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td>07.08.2018</td>
<td>S1290692654</td>
<td></td>
</tr>
</tbody>
</table>

octanol/water

**pinoxaden:**
- **Bioaccumulation**: Remarks: Low bioaccumulation potential.
- **Partition coefficient**: n-octanol/water: $\log \text{Pow} = 3.2$ (25 °C)

**cloquintocet-mexyl:**
- **Bioaccumulation**: Remarks: Does not bioaccumulate.
- **Partition coefficient**: n-octanol/water: $\log \text{Pow} = 5.24$ (25 °C)

### 12.4 Mobility in soil

**Components:**

#### clodinafop-propargyl (ISO):
- Distribution among environmental compartments: Remarks: Low mobility in soil.
- Stability in soil:
  - Dissipation time: < 0.5 d
  - Percentage dissipation: 50% (DT50)
  - Remarks: Product is not persistent.

#### pinoxaden:
- 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:

clodinafop-propargyl (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)..

pinoxaden:
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)..

12.6 Other adverse effects

Product: Additional ecological information : Long-term (chronic) aquatic hazard Classification of the product is based on the summation of the concentrations of classified components.

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 : 150110, packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

14.1 UN number
ADN : UN 3082
14.2 UN proper shipping name

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

14.3 Transport hazard class(es)

ADN: 9
ADR: 9
RID: 9
IMDG: 9
IATA: 9

14.4 Packing group

ADN
Packing group: III
Classification Code: M6
Hazard Identification Number: 90
Labels: 9

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**: Miscellaneous

### IATA (Passenger)

- **Packing instruction (passenger aircraft)**: 964
- **Packing instruction (LQ)**: Y964
- **Packing group**: III
- **Labels**: Miscellaneous

#### 14.5 Environmental hazards

<table>
<thead>
<tr>
<th>Code</th>
<th>Environmentally hazardous</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>ADR</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>RID</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>

### 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 and the IBC Code**

Not applicable for product as supplied.

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### SECTION 15: Regulatory information

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

: Not applicable

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

: Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer

: Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants

: Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)

: Conditions of restriction for the following entries should be considered:

Number on list 3
tetrahydro-2-furylmethanol (Number on list 30)


<table>
<thead>
<tr>
<th>E2</th>
<th>ENVIRONMENTAL HAZARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams), (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)</td>
</tr>
<tr>
<td></td>
<td>Quantity 1</td>
</tr>
<tr>
<td></td>
<td>200 t</td>
</tr>
<tr>
<td></td>
<td>2,500 t</td>
</tr>
</tbody>
</table>

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.

Use plant protection products safely. Always read the label and product information before use.

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.
H360Df : May damage the unborn child. Suspected of damaging fertility.
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 : 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
91/322/EEC / TWA : Limit Value - eight hours

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; KECl - 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:

<table>
<thead>
<tr>
<th>Property</th>
<th>Classification</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irr.</td>
<td>H319</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Skin Sens.</td>
<td>H317</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Repr.</td>
<td>H360Df</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Asp. Tox.</td>
<td>H304</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic</td>
<td>H411</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

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 other process, unless specified in the text.

GB / EN