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

1.1 Product identifier
- Trade name: ALTO ELITE
- Design code: A8384A
- Product Registration Number: MAPP 08467

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

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)
- Acute toxicity, Category 4: H332: Harmful if inhaled.
- Serious eye damage, Category 1: H318: Causes serious eye damage.
- Skin sensitisation, Category 1: H317: May cause an allergic skin reaction.
- Carcinogenicity, Category 2: H351: Suspected of causing cancer.
- Reproductive toxicity, Category 1B: H360D: May damage the unborn child.
- Specific target organ toxicity - single exposure: H335: May cause respiratory irritation.
### ALTO ELITE

**Safety Data Sheet**

according to Regulation (EC) No. 1907/2006

<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>12.0</td>
<td>06.02.2018</td>
<td>S11073133</td>
<td></td>
</tr>
</tbody>
</table>

- **posure, Category 3, Respiratory system**
  - Acute aquatic toxicity, Category 1: H400: Very toxic to aquatic life.
  - Chronic aquatic toxicity, Category 1: H410: Very toxic to aquatic life with long lasting effects.

### 2.2 Label elements

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

<table>
<thead>
<tr>
<th>Hazard pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Hazard Pictograms]</td>
</tr>
</tbody>
</table>

- **Signal word**: Danger
- **Hazard statements**:
  - H317: May cause an allergic skin reaction.
  - H318: Causes serious eye damage.
  - H332: Harmful if inhaled.
  - H335: May cause respiratory irritation.
  - H351: Suspected of causing cancer.
  - H360D: May damage the unborn child.
  - H410: Very toxic to aquatic life with long lasting effects.

- **Supplemental Hazard Statements**: EUH401
  - To avoid risks to human health and the environment, comply with the instructions for use.

- **Precautionary statements**:
  - P102: Keep out of reach of children.

**Prevention**:

- P201: Obtain special instructions before use.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P281: Use personal protective equipment as required.

**Response**:

- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P305 + P351 + P338 + P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
- 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 triple rinsed clean containers which can be disposed of as non-hazardous waste.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

ALTO ELITE

Version 12.0  Revision Date: 06.02.2018  SDS Number: S11073133  This version replaces all previous versions.

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

<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>chlorothalonil (ISO)</td>
<td>1897-45-6</td>
<td>217-588-1</td>
<td>608-014-00-4</td>
<td></td>
<td>Acute Tox. 2; H330 Eye Dam. 1; H318 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td>cyproconazole (ISO)</td>
<td>94361-06-5</td>
<td>650-032-00-X</td>
<td></td>
<td></td>
<td>Acute Tox. 3; H301 Repr. 1B; H360D STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 3 - &lt; 5</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.
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.

4.2 Most important symptoms and effects, both acute and delayed
Symptoms: Nonspecific. No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed
Treatment: There is no specific antidote available. Treat symptomatically.

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 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.
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

5 / 20
Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
--- | --- | --- | --- | --- |
chlorothalonil (ISO) | 1897-45-6 | TWA | 0.1 mg/m³ | Syngenta |
propane-1,2-diol | 57-55-6 | TWA (particles) | 10 mg/m³ | GB EH40 |
Further information | | | Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used |
57-55-6 | TWA (Total vapour and particles) | 150 ppm 474 mg/m³ | GB EH40 |
Further information | | | Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used |
cyproconazole (ISO) | 94361-06-5 | TWA | 0.5 mg/m³ | Syngenta |

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

<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>propane-1,2-diol</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>168 mg/m³</td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>30 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

**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>propane-1,2-diol</td>
<td>Fresh water</td>
<td>260 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>26 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>183 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>20000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>57.2 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>572 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>50 mg/kg</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.
Seek additional occupational hygiene advice.

**Personal protective equipment**

**Eye protection**

- Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.
- Tightly fitting safety goggles
- Face-shield
Use eye protection according to EN 166.

Hand protection

| Material | Nitrile rubber |
| Break through time | > 480 min |
| Glove length | 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 work-place. Remove and wash contaminated clothing before re-use. Wear as appropriate: Impervious clothing

Respiratory protection: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Suitable respiratory equipment: Respirator with a particle filter (EN 143) The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Filter type: Particulates type (P)

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  : suspension

Colour       : grey to brown

Odour        : characteristic

Odour Threshold : No data available

pH           : 5 - 9
              Concentration: 1 % w/v

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : > 101 °C
              Method: Pensky-Martens closed cup

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Density : 1.21 g/cm³ (25 °C)

Solubility(ies) : No data available

Solubility in other solvents : No data available

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

Auto-ignition temperature : > 650 °C

Decomposition temperature : No data available

Viscosity : 47 - 507 mPa.s (20 °C)

            31 - 436 mPa.s (40 °C)
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information
Surface tension : 48.2 mN/m, 100 %, 20 °C

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, male and female): > 5,000 mg/kg
Acute inhalation toxicity : LC50 (Rat, male and female): > 1.25 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

Components:

chlorothalonil (ISO):
Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Acute inhalation toxicity : LC50 (Rat, male and female): 0.10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

cyproconazole (ISO):
Acute oral toxicity : LD50 (Rat, male): 350 mg/kg
Acute inhalation toxicity : LC50 (Rat, male and female): > 2.03 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

Skin corrosion/irritation

Product:
Species : Rabbit
Result : No skin irritation

Components:

chlorothalonil (ISO):
Species : Rabbit
Result : No skin irritation

cyproconazole (ISO):
Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Product:
Species : Rabbit
Result : Risk of serious damage to eyes.
Components:

clorothalonil (ISO):
Species : Rabbit
Result : Risk of serious damage to eyes.

cyproconazole (ISO):
Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitisation

Product:
Species : man
Result : May cause sensitisation by skin contact.
Remarks : Derived from components.

Components:

clorothalonil (ISO):
Species : Guinea pig
Result : May cause sensitisation by skin contact.
Remarks : In very rare cases may cause an allergic response of the respiratory system.

cyproconazole (ISO):
Species : Guinea pig
Result : Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Components:

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

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

Carcinogenicity

Components:

clorothalonil (ISO):
Carcinogenicity - Assessment : Chlorothalonil causes kidney tumours in rats and mice via a non-gentoxic mode of action secondary to target organ toxici-
Carcinogenicity - Assessment:

- **Cyproconazole (ISO):** No evidence of carcinogenicity in animal studies.
- **Chlorothalonil (ISO):** Limited evidence of carcinogenicity in animal studies.

Reproductive toxicity

**Components:**

- **Chlorothalonil (ISO):** No toxicity to reproduction
- **Cyproconazole (ISO):** Some evidence of adverse effects on development, based on animal experiments.

STOT - single exposure

**Components:**

- Chlorothalonil (ISO): The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure

**Components:**

- Cyproconazole (ISO): Liver
  - The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Repeated dose toxicity

**Components:**

- Chlorothalonil (ISO): The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
SECTION 12: Ecological information

12.1 Toxicity

**Product:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Endpoint</th>
<th>Concentration</th>
<th>Exposure Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tox. to fish</td>
<td>LC50 (Oncorhynchus mykiss (rainbow trout))</td>
<td>0.18 mg/l</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>Exposure time: 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tox. to daphnia and other</td>
<td>EC50 (Daphnia magna (Water flea))</td>
<td>0.14 mg/l</td>
<td>48 h</td>
</tr>
<tr>
<td>aquatic invertebrates</td>
<td>Exposure time: 48 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tox. to algae</td>
<td>ErC50 (Pseudokirchneriella subcapitata (green algae))</td>
<td>2.7 mg/l</td>
<td>72 h</td>
</tr>
<tr>
<td></td>
<td>NOEC (Pseudokirchneriella subcapitata (green algae))</td>
<td>0.19 mg/l</td>
<td>72 h</td>
</tr>
<tr>
<td></td>
<td>Exposure time: 72 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Components:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorothalonil (ISO):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tox. to fish</td>
<td>LC50 (Oncorhynchus mykiss (rainbow trout))</td>
<td>0.039 mg/l</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>Exposure time: 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tox. to daphnia and other</td>
<td>EC50 (Daphnia magna (Water flea))</td>
<td>0.07 mg/l</td>
<td>48 h</td>
</tr>
<tr>
<td>aquatic invertebrates</td>
<td>Exposure time: 48 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tox. to algae</td>
<td>ErC50 (Navicula pelliculosa (Freshwater diatom))</td>
<td>0.02 mg/l</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>NOEC (Navicula pelliculosa (Freshwater diatom))</td>
<td>0.0035 mg/l</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>End point: Growth rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exposure time: 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M-Factor (Acute aquatic toxicity)</td>
<td></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Tox. to fish (Chronic toxicity)</td>
<td></td>
<td>NOEC: 0.003 mg/l</td>
<td>297 d</td>
</tr>
<tr>
<td></td>
<td>Species: Pimephales promelas (fathead minnow)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tox. to daphnia and other</td>
<td></td>
<td>NOEC: 0.035 mg/l</td>
<td>21 d</td>
</tr>
<tr>
<td>aquatic invertebrates (Chronic toxicity)</td>
<td></td>
<td>Species: Daphnia magna (Water flea)</td>
<td></td>
</tr>
</tbody>
</table>
NOEC: 0.00083 mg/l  
Exposure time: 28 d  
Species: Americamysis bahia (Mysid shrimp)

M-Factor (Chronic aquatic toxicity): 10

cyproconazole (ISO):
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 19 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 26 mg/l  
Exposure time: 48 h

Toxicity to algae: EC50 (Desmodesmus subspicatus (green algae)): 0.077 mg/l  
Exposure time: 96 h

NOEC (Desmodesmus subspicatus (green algae)): 0.021 mg/l  
Exposure time: 96 h

EC50 (Lemna gibba (gibbous duckweed)): > 0.2 mg/l  
Exposure time: 7 d

NOEC (Lemna gibba (gibbous duckweed)): 0.025 mg/l  
End point: Growth rate  
Exposure time: 7 d

M-Factor (Acute aquatic toxicity): 10

Toxicity to fish (Chronic toxicity): NOEC: 0.305 mg/l  
Exposure time: 93 d  
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC: 0.023 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity): 1

12.2 Persistence and degradability

Components:

chlorothalonil (ISO):
Stability in water: Degradation half life: < 5 d (20 °C)  
Remarks: Product is not persistent.

cyproconazole (ISO):
Biodegradability: Result: Not readily biodegradable.
Stability in water : Degradation half life: 5 d (20 °C)  
Remarks: Product is not persistent.

12.3 Bioaccumulative potential

Components:

chlorothalonil (ISO):
Bioaccumulation : Remarks: Low bioaccumulation potential.
Partition coefficient: n-octanol/water : log Pow: 2.94 (25 °C)

cyproconazole (ISO):
Bioaccumulation : Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water : log Pow: 3.1 (25 °C)

12.4 Mobility in soil

Components:

chlorothalonil (ISO):
Distribution among environmental compartments : Remarks: Chlorothalonil has low to slight mobility in soil.
Stability in soil : Dissipation time: 7 d  
Percentage dissipation: 50 % (DT50)  
Remarks: Product is not persistent.

cyproconazole (ISO):
Distribution among environmental compartments : Remarks: Low to medium mobility in soil.
Stability in soil : Dissipation time: 100 - 124 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:
chlorothalonil (ISO):
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

ALTO ELITE

Version 12.0 Revision Date: 06.02.2018 SDS Number: S11073133 This version replaces all previous versions.

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

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.

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

SECTION 14: Transport information

14.1 UN number
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. (CHLOROTHALONIL)
ADR: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CHLOROTHALONIL)
RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

ALTO ELITE

Version 12.0
Revision Date: 06.02.2018
SDS Number: S11073133
This version replaces all previous versions.

14.3 Transport hazard class(es)

**IMDG**: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Chlorothalonil)

**IATA**: Environmentally hazardous substance, liquid, n.o.s.
(Chlorothalonil)

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

ADN
Environmentally hazardous : yes

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 and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : 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:


E1 ENVIRONMENTAL HAZARDS Quantity 1: 100 t Quantity 2: 200 t

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**

- **H301**: Toxic if swallowed.
- **H317**: May cause an allergic skin reaction.
- **H318**: Causes serious eye damage.
- **H330**: Fatal if inhaled.
- **H335**: May cause respiratory irritation.
- **H351**: Suspected of causing cancer.
- **H360D**: May damage 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.

**Full text of other abbreviations**

- **Acute Tox.**: Acute toxicity
- **Aquatic Acute**: Acute aquatic toxicity
- **Aquatic Chronic**: Chronic aquatic toxicity
- **Carc.**: Carcinogenicity
- **Eye Dam.**: Serious eye damage
- **Repr.**: Reproductive toxicity
- **Skin Sens.**: Skin sensitisation
- **STOT RE**: Specific target organ toxicity - repeated exposure
- **STOT SE**: Specific target organ toxicity - single exposure
- **GB EH40**: UK. EH40 WEL - Workplace Exposure Limits
- **GB EH40 / TWA**: Long-term exposure limit (8-hour TWA 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; 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 Organization 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:

<table>
<thead>
<tr>
<th>Classification procedure:</th>
<th>Classification</th>
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<tbody>
<tr>
<td>Acute Tox. 4</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Carc. 2</td>
<td>Calculation method</td>
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<tr>
<td>STOT SE 3</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

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