MAPP 13383

A contact insecticide for the control of aphids in winter and spring wheat and winter and spring barley and control of pollen beetles, cabbage seed weevil and aphids in winter and spring oilseed rape and reduction in cabbage stem flea beetle in winter oilseed rape.

An oil in water emulsion containing 240 g/litre (22.0% w/w) tau-fluvalinate.

Warning

Very toxic to aquatic life with long lasting effects. Keep out of reach of children. Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site except for empty, clean containers which can be disposed of as non-hazardous waste.

To avoid risks to human health and the environment, comply with the instructions for use.
**IMPORTANT INFORMATION**
FOR PROFESSIONAL USE ONLY AS AN AGRICULTURAL INSECTICIDE

<table>
<thead>
<tr>
<th>Crops/situations</th>
<th>Maximum individual dose (L/product/ha)</th>
<th>Maximum total dose (L/product/ha/crop)</th>
<th>Maximum number of treatments</th>
<th>Latest time of application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat (winter)</td>
<td>0.2</td>
<td>0.4</td>
<td>-</td>
<td>Before kernel medium milk</td>
</tr>
<tr>
<td>Barley (winter)</td>
<td>0.2</td>
<td>0.4</td>
<td>-</td>
<td>Before caryopsis watery ripe</td>
</tr>
<tr>
<td>Wheat (spring)</td>
<td>0.15</td>
<td>-</td>
<td>1 per crop</td>
<td>Before kernel medium milk</td>
</tr>
<tr>
<td>Barley (spring)</td>
<td>0.15</td>
<td>-</td>
<td>1 per crop</td>
<td>Before caryopsis watery ripe</td>
</tr>
<tr>
<td>Oilseed rape</td>
<td>0.2</td>
<td>0.4</td>
<td>-</td>
<td>Up to and including the end of flowering</td>
</tr>
</tbody>
</table>

**Other specific restrictions:**
This product must not be applied to a cereal crop if any other product containing either a pyrethroid or dimethoate has been applied to that crop after the start of ear emergence. A minimum interval of 14 days must be observed between applications when applied to listed cereals.

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

Operator Protection
Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment.
WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.
WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.
WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) when applying the product.
However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher level of control.
AFTER CONTACT WITH SKIN, WASH IMMEDIATELY with plenty of water.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY with plenty of water and seek medical advice.
DO NOT BREATHE SPRAY.
WASH HANDS AND EXPOSED SKIN before meals and after work.

Environmental Protection
Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.
DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5m of the top of the bank of any static or flowing waterbody, or 1m of the top of a ditch which is dry at the time of application. DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1m of the top of the bank of a static or flowing waterbody. Aim spray away from water.

DIRECTIONS FOR USE

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

RESTRICTIONS

Safety to non-target arthropods
When used as directed at 0.15 L/ha, REVOLT™ presents a low risk to ground (carabid) beetles, rove (Staphylinid) beetles and adult hoverflies (Syrphids), though some reduction in numbers may occur. Laboratory studies indicate that reductions in fecundity and egg viability may occur.
Avoid spraying oilseed rape within 6m of the field boundary to reduce effects on certain non-target insects or other arthropods.

Resistance
Control may be reduced where strains of pests resistant to tau-fluvalinate develop.
PEST CONTROL

Winter and spring barley, winter and spring wheat
Summer aphids
Autumn/winter aphids

Winter and spring oilseed rape
Pollen (blossom) beetle
Aphids
Cabbage stem flea beetle (winter oilseed rape)
Cabbage seed weevil

CROP SPECIFIC INFORMATION

Winter and spring barley, winter and spring wheat
(summer aphid control)

Maximum individual dose: 0.15 L/ha
As a guide, spray once when aphids appear on two thirds of the ears and numbers are increasing. Utilise local predictive warnings if available.

Winter barley and winter wheat (autumn/winter applications)

Maximum individual dose: 0.2 L/ha
Treat according to specialist advice, normally:

High Risk Crops: drilled in September/early October, in virus prone areas or following grass or weedy stubble.
Spray mid-October. A repeat application should be made during late autumn/early winter if aphid activity persists.

Medium Risk Crops: drilled before mid-October, in virus prone areas.
Spray late October/early November.*

Low Risk Crops: drilled after mid-October and crops in non-virus prone areas.
Follow seasonal warnings based on aphid monitoring in local area*.

N.B. *In mild conditions, later sprays may be worthwhile.

Maximum total dose (all cereal uses)
Winter wheat & barley – 0.4 L/product/ha/crop
Spring wheat & barley – 0.15 L/product/ha/crop

Latest time of application (cereals)

Winter and spring wheat: Before kernel medium milk
Winter and spring barley: Before caryopsis watery ripe

Winter and spring oilseed rape

Pollen (blossom) beetle

Maximum individual dose: 0.2 L/ha
Optimum control of this pest is achieved by application at the green to yellow bud stage. Apply according to local threshold advice.
A repeat application may be made if pollen beetle activity persists.

Aphids

Maximum individual dose: 0.2 L/ha
Not recommended for use to control aphids on spring rape. Spray according to local advice based on monitoring.
A repeat application may be made if aphid activity persists.

Cabbage stem flea beetle

Maximum individual dose: 0.2 L/ha
Egg hatch can be from October to March but mostly takes place in late autumn and from mid-late January. Apply according to local threshold advice.
REVOLT will reduce damage caused by cabbage stem flea beetle in winter oilseed rape.
For optimal results a repeat application is advisable if cabbage stem flea beetle activity persists.
**Cabbage seed weevil**

**Maximum individual dose:** 0.2 L/ha

Apply during flowering period when the numbers of pests reach the threshold or according to local advice based on monitoring. This is usually between 20% pod set and the end of flowering. For spring varieties, make the first application at green to yellow bud stage. Make a repeat application during flowering as required.

**Maximum total dose**

Winter oilseed rape - 0.4 L/product/ha/crop
Spring oilseed rape - 0.4 L/product/ha/crop

**Latest time of application**

Winter and spring oilseed rape: Up to and including end of flowering

**APPLICATION**

Good spray cover of the target is essential. Apply through a conventional hydraulic sprayer.

Do not leave the spray liquid in the sprayer for long periods (i.e. during meals or overnight).

**SPRAY VOLUME**

A minimum of 200 litres of water per hectare should be used for all applications. Increase this volume of water in order to obtain good penetration into dense crops.

**SPRAY QUALITY**

Apply as a MEDIUM quality spray as defined by BCPC. A minimum pressure of 2-3 bar should be used.

**MIXING AND SPRAYING**

Shake the container of REVOLT thoroughly before opening. Add half the required volume of clean water to the spray tank. Add the recommended quantity of REVOLT. Agitate whilst filling the tank to the required water volume and continue agitation during spraying. Wash out all spray equipment with water immediately after use.

---

**CONDITIONS OF SUPPLY**

All products supplied by us are of high grade and conform to specification at the time of delivery, but, as we cannot exercise control over their subsequent storage, handling, mixing or use or the weather conditions before, during and after application which may affect the performance of the products, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose of our products are excluded and no responsibility or liability will be accepted by us or our re-sellers for any failure in performance, damage or injury to person or property whatsoever arising from the storage, handling, application or use of the products. These conditions cannot be varied by our staff or agents whether or not they supervise or assist in the use of such products.

Adama Agricultural Solutions UK Ltd
Unit 15, Thatcham Business Village
Colthrop Way, Thatcham, Berkshire RG19 4LW
Telephone: 01635 860555
Technical Helpline: 01635 876622
www.adama.com
Email: ukenquiries@adama.com

REVOLT™ is a trademark of a company of the Adama Group. © 2014 Adama Agricultural Solutions UK Ltd
This Safety Data Sheet does not form part of the approved label. Following the instructions on the pesticide Product Label for the specified uses should ensure that the product is used safely and efficaciously for those uses.

SAFETY DATA SHEET
Safety Data Sheet according to Regulation (EC) No. 1907/2006 Annex II

Revised on / Version: 24.10.2013 / 0001
Replaces revision of / Version: 24.10.2013 / 0001
Valid from: 24.10.2013

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier
Revolt

240 g/l tau-fluvalinate CAS 102851-06-9

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses of the substance or mixture:
Insecticide
Uses advised against:
Not applicable

1.3 Details of the supplier of the safety data sheet
Adama Agricultural Solutions UK Ltd,
Unit 15, Thatcham Business Village
Colthrop Way, Thatcham, Berkshire RG19 4LW
Telephone: 01635 860555, Fax: 01635 861555

Qualified person’s e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de
Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone
Emergency information services/official advisory body:
National Chemical Emergency Centre (UK): 01865 407333 (24 hours)
Telephone number of the company in case of emergencies:
Telephone: 01635 860555

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) 1272/2008 (CLP)

<table>
<thead>
<tr>
<th>Hazard class</th>
<th>Hazard category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute</td>
<td>1</td>
<td>H400- Very toxic to aquatic life.</td>
</tr>
<tr>
<td>Aquatic Chronic</td>
<td>1</td>
<td>H410- Very toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

2.1.2 Classification according to Directives 67/548/EEC and 1999/45/EC (including amendments)
N, Dangerous for the environment, R50-53

2.2 Label elements

2.2.1 Labelling according to Regulation (EC) 1272/2008 (CLP)

Warning

Hazard statement
H410- Very toxic to aquatic life with long lasting effects.
P102- Keep out of reach of children.

Disposal
P501- Dispose of contents/container to hazardous or special waste collection point.
EUH401- To avoid risks to human health and the environment, comply with the instructions for use.
SP 1- Do not contaminate water with the product or its container (Do not clean application equipment near surface water/avoid contamination via drains from farmyards and roads).

2.3 Other hazards
The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006.
The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006.
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Formulation: emulsion in water

3.1 Substance
n.a.

3.2 Mixture

<table>
<thead>
<tr>
<th>tau-flualinate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration number (REACH)</td>
<td>---</td>
</tr>
<tr>
<td>Index</td>
<td>607-238-00-X</td>
</tr>
<tr>
<td>EINECS, ELINCS, NLP</td>
<td>---</td>
</tr>
<tr>
<td>CAS</td>
<td>CAS 102851-06-9</td>
</tr>
<tr>
<td>Content %</td>
<td>20-&lt;25</td>
</tr>
</tbody>
</table>
| Classification according to Directive 67/548/EEC | Harmful, Xn, R22  
Irritant, Xi, R38  
Dangerous for the environment, N, R50  
Dangerous for the environment, R53 |
| Classification according to Regulation (EC) 1272/2008 (CLP) | Acute Tox. 4, H302  
Skin Irrit. 2, H315  
Aquatic Acute 1, H400 (M=1000)  
Aquatic Chronic 1, H410 (M=1000) |

<table>
<thead>
<tr>
<th>Hydrocarbons, C9, aromatics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration number (REACH)</td>
<td>01-2119455851-35-XXXX</td>
</tr>
<tr>
<td>Index</td>
<td>---</td>
</tr>
<tr>
<td>EINECS, ELINCS, NLP</td>
<td>918-668-5 (REACH-IT List-No.)</td>
</tr>
<tr>
<td>CAS</td>
<td>(64742-95-6)</td>
</tr>
<tr>
<td>Content %</td>
<td>1-5</td>
</tr>
</tbody>
</table>
| Classification according to Directive 67/548/EEC | Flammable, R10  
Irritant, Xi, R37  
Dangerous for the environment, N, R51  
Dangerous for the environment, R53  
Harmful, Xn, R65  
R66  
R67 |
| Classification according to Regulation (EC) 1272/2008 (CLP) | Flam. Liq. 3, H226  
Asp. Tox. 1, H304  
STOT SE 3, H335  
STOT SE 3, H336  
Aquatic Chronic 2, H411 |
Methanol Substance for which an EU exposure limit value applies.

<table>
<thead>
<tr>
<th>Substance for which an EU exposure limit value applies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration number (REACH)</td>
</tr>
<tr>
<td>--</td>
</tr>
<tr>
<td>Index</td>
</tr>
<tr>
<td>603-001-00-X</td>
</tr>
<tr>
<td>EINECS, ELINCS, NLP</td>
</tr>
<tr>
<td>200-659-6</td>
</tr>
<tr>
<td>CAS</td>
</tr>
<tr>
<td>CAS 67-56-1</td>
</tr>
<tr>
<td>Content %</td>
</tr>
<tr>
<td>&lt;1</td>
</tr>
<tr>
<td>Classification according to Directive 67/548/EEC</td>
</tr>
<tr>
<td>Highly flammable, F, R11</td>
</tr>
<tr>
<td>Toxic, T, R23/24/25</td>
</tr>
<tr>
<td>Toxic, T, R39/23/24/25</td>
</tr>
<tr>
<td>Classification according to Regulation (EC) 1272/2008 (CLP)</td>
</tr>
<tr>
<td>Flam. Liq. 2, H225</td>
</tr>
<tr>
<td>Acute Tox. 3, H331</td>
</tr>
<tr>
<td>Acute Tox. 3, H311</td>
</tr>
<tr>
<td>Acute Tox. 3, H301</td>
</tr>
<tr>
<td>STOT SE 1, H370</td>
</tr>
</tbody>
</table>

For the text of the R-phrases / H-phrases and classification codes (GHS/CLP), see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

**Inhalation**
Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms.

**Skin contact**
Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

**Eye contact**
Remove contact lenses.
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

**Ingestion**
Rinse the mouth thoroughly with water.
Give copious water to drink - consult doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

If applicable delayed symptoms and effects can be found in Section 11 and the absorption route in Section 4.1.
In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

4.3 Indication of any immediate medical attention and special treatment needed
n.c.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

**Suitable extinguishing media**
Water jet spray/foam/CO₂/dry extinguisher

**Unsuitable extinguishing media**
High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:
- Oxides of carbon
- Oxides of nitrogen
- Hydrogen chloride
- Toxic gases

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
According to size of fire
Full protection, if necessary
Dispose of contaminated extinction water according to official regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure sufficient supply of air.
Avoid inhalation and contact with eyes or skin.
If applicable, caution - risk of slipping.

6.2 Environmental precautions

If leakage occurs, dam up.
Resolve leaks if this possible without risk.
Prevent surface and ground-water infiltration, as well as ground penetration.
Prevent from entering drainage system.
If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.
Fill the absorbed material into lockable containers.
Clean soiled bottles immediately.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.
SECTION 7: HANDLING AND STORAGE

In addition to information given in this section, relevant information can also be found in Sections 6.1 and 8.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.
Avoid aerosol formation.
Avoid contact with eyes or skin.
Eating, drinking, smoking, as well as food storage, is prohibited in work room.
Separate storage of protective clothing.
Observe directions on label and instructions for use.
Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
Observe regulations for keeping separated.
Store product closed and only in original packing.
Under all circumstances prevent penetration into the soil.
Store at room temperature.
Protect from direct sunlight and warming.
Protect from frost.

7.3 Specific end use(s)

No information available at present.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Workplace exposure limit (WEL) of the total hydrocarbon solvent content of the mixture (RCP method according to EH40): 500 mg/m³

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hydrocarbons, C9, aromatics</th>
<th>Content %: 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 500 mg/m³ (Aromatics)</td>
<td>WEL-STEL: ---</td>
<td>---</td>
</tr>
<tr>
<td>BMGV: ---</td>
<td>Other information: ---</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Methanol</th>
<th>Content %: &lt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 200 ppm (266 mg/m³) (WEL), 200 ppm (260 mg/m³) (EU)</td>
<td>WEL-STEL: 250 ppm (333 mg/m³) (WEL)</td>
<td>---</td>
</tr>
<tr>
<td>BMGV: ---</td>
<td>Other information: Sk (WEL, EU)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Propane-1,2-diol</th>
<th>Content %:</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-TWA: 150 ppm (474 mg/m³) (total, vapour and particulates), 10 mg/m³ (particulates)</td>
<td>WEL-STEL: ---</td>
<td>---</td>
</tr>
<tr>
<td>BMGV: ---</td>
<td>Other information: ---</td>
<td></td>
</tr>
</tbody>
</table>

WEL-TWA = Workplace Exposure Limit - Long term exposure limit (8 hour TWA (= time weighted average) reference period)
EH40. AGW = ‘Arbeitsplatzgrenzwert’ (workplace limit value, Germany). | WEL-STEL = Workplace Exposure Limit - Short term exposure limit (15 minute reference period). | BMGV = Biological monitoring guidance value EH40. BGW = ‘Biologischer Grenzwert’ (biological limit value, Germany). | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.
### Methanol

<table>
<thead>
<tr>
<th>Area of application</th>
<th>Exposure route / Environmental compartment</th>
<th>Effect on health</th>
<th>Descriptor</th>
<th>Value</th>
<th>Unit</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers/employees</td>
<td>Human – dermal</td>
<td>Short term, systemic effects</td>
<td>DNEL</td>
<td>40</td>
<td>mg/kg body weight/day</td>
<td></td>
</tr>
<tr>
<td>Workers/employees</td>
<td>Human – inhalation</td>
<td>Short term, systemic effects</td>
<td>DNEL</td>
<td>260</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Workers/employees</td>
<td>Human – inhalation</td>
<td>Short term, local effects</td>
<td>DNEL</td>
<td>260</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Workers/employees</td>
<td>Human – dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>40</td>
<td>mg/kg body weight/day</td>
<td></td>
</tr>
<tr>
<td>Workers/employees</td>
<td>Human – inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>260</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Workers/employees</td>
<td>Human – inhalation</td>
<td>Long term, local effects</td>
<td>DNEL</td>
<td>260</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – dermal</td>
<td>Short term, systemic effects</td>
<td>DNEL</td>
<td>8</td>
<td>mg/kg body weight/day</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – inhalation</td>
<td>Short term, systemic effects</td>
<td>DNEL</td>
<td>50</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – oral</td>
<td>Short term, systemic effects</td>
<td>DNEL</td>
<td>8</td>
<td>mg/kg body weight/day</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – inhalation</td>
<td>Short term, local effects</td>
<td>DNEL</td>
<td>50</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>8</td>
<td>mg/kg body weight/day</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>50</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – oral</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>8</td>
<td>mg/kg body weight/day</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – inhalation</td>
<td>Long term, local effects</td>
<td>DNEL</td>
<td>50</td>
<td>mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### Hydrocarbons, C9, aromatics

<table>
<thead>
<tr>
<th>Area of application</th>
<th>Exposure route / Environmental compartment</th>
<th>Effect on health</th>
<th>Descriptor</th>
<th>Value</th>
<th>Unit</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers/employees</td>
<td>Human – dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>25</td>
<td>mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>Workers/employees</td>
<td>Human – inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>150</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>32</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>11</td>
<td>mg/kg bw/d</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – oral</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>11</td>
<td>mg/kg bw/day</td>
<td></td>
</tr>
</tbody>
</table>
### Propane-1,2-diol

<table>
<thead>
<tr>
<th>Area of application</th>
<th>Exposure route / Environmental compartment</th>
<th>Effect on health</th>
<th>Descriptor</th>
<th>Value</th>
<th>Unit</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers/employees</td>
<td>Human – inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>168</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Workers/employees</td>
<td>Human – inhalation</td>
<td>Long term, local effects</td>
<td>DNEL</td>
<td>10</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – dermal</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>213</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – inhalation</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>50</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – oral</td>
<td>Long term, systemic effects</td>
<td>DNEL</td>
<td>85</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>Human – inhalation</td>
<td>Long term, local effects</td>
<td>DNEL</td>
<td>10</td>
<td>mg/m³</td>
<td></td>
</tr>
<tr>
<td>Environment – freshwater</td>
<td></td>
<td></td>
<td>PNEC</td>
<td>260</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td>Environment – marine</td>
<td></td>
<td></td>
<td>PNEC</td>
<td>26</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td>Environment – sewage treatment plant</td>
<td></td>
<td></td>
<td>PNEC</td>
<td>2000</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td>Environment – sediment, freshwater</td>
<td></td>
<td></td>
<td>PNEC</td>
<td>572</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td>Environment - sediment, marine</td>
<td></td>
<td></td>
<td>PNEC</td>
<td>57,2</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td>Environment – soil</td>
<td></td>
<td></td>
<td>PNEC</td>
<td>50</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td>Environment – water, sporadic (intermittent) release</td>
<td></td>
<td></td>
<td>PNEC</td>
<td>183</td>
<td>mg/l</td>
<td></td>
</tr>
</tbody>
</table>

**8.2 Exposure controls**

**8.2.1 Appropriate engineering controls**
Ensure good ventilation. This can be achieved by local suction or general air extraction.
If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.

**8.2.2 Individual protection measures, such as personal protective equipment**
General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:
Universal protective gloves (plant protection)
Minimum layer thickness in mm: 0,5
Permeation time (penetration time) in minutes: >= 120
The breakthrough times determined in accordance with EN 374 Part III were not obtained under practical conditions.
The recommended maximum wearing time is 50% of breakthrough time.
Protective hand cream recommended.

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments)
Respiratory protection:
If OES or MEL is exceeded.
Gas mask filter A (EN 14387), code colour brown
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
Not applicable.

Additional information on hand protection - No tests have been performed. In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents. Selection of materials derived from glove manufacturer’s indications. Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account. Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

**8.2.3 Environmental exposure controls**
No information available at present.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state: Liquid
Colour: Grey, white
Odour: Slightly
Odour threshold: Not determined
pH-value: 5.2 - 5.4 (1%, CIPAC MT 75.2)
Melting point/freezing point: Not determined
Initial boiling point and boiling range: ~95°C
Flash point: >95°C (DIN 51758 (Pensky-Martens, closed cup))
Evaporation rate: Not determined
Flammability (solid, gas): Not determined
Lower explosive limit: n.a.
Upper explosive limit: n.a.
Vapour pressure: 0.00009 µPa (20°C, tau-fluvalinate, (calc))
Vapour density (air = 1): Not determined
Density: 1.088 g/ml (Regulation (EC) 440/2008 A.3. (RELATIVE DENSITY))
Bulk density: Not determined
Solubility(ies): Emulsion
Water solubility:
Partition coefficient (n-octanol/water): 7.02 (tau-fluvalinate, (log Pow, HPLC))
Auto-ignition temperature: 455°C (Regulation (EC) 440/2008 A.15. (AUTO-IGNITION TEMPERATURE (LIQUIDS AND GASES)))
Decomposition temperature: Not determined
Viscosity: 280 mPas (20°C, (rotational viscosimeter))
Explosive properties: Product is not explosive
Oxidising properties: Not to be expected

9.2 Other information

Miscibility: Not determined
Fat solubility / solvent: Not determined
Conductivity: Not determined
Surface tension: 47.6-47.7 mN/m (20°C, Regulation (EC) 440/2008 A.5. (SURFACE TENSION))
Solvents content: Not determined
Metal content: Not determined
Molar mass: Not determined
Chemical heat of combustion: Not determined

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
Not to be expected

10.2 Chemical stability
Stable with proper storage and handling.

10.3 Possibility of hazardous reactions
No dangerous reactions are known.

10.4 Conditions to avoid
See also Section 7.
Protect from frost.
Heating

10.5 Incompatible materials
See also Section 7.
Avoid contact with other chemicals.
Avoid contact with strong oxidising agents.

10.6 Hazardous decomposition products
See also Section 5.2.
No decomposition when used as directed.
### SECTION 11: TOXICOLOGICAL INFORMATION
Possibly more information on health effects, see Section 2.1 (classification).

#### Revolt

<table>
<thead>
<tr>
<th>Toxicity/effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>17140</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td>(male)</td>
</tr>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>2020</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td>(female)</td>
</tr>
<tr>
<td>Acute toxicity, by dermal route:</td>
<td>LD50</td>
<td>&gt;2100</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>&gt;2,94</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td>OECD 403 (Acute Inhalation Toxicity)</td>
<td>Maximum achievable concentration.</td>
</tr>
<tr>
<td>Skin corrosion/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td></td>
<td>Not irritant</td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td></td>
<td>Slightly irritant</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td>Regulation (EC) 440/2008 B.14 (REVERSE MUTATION TEST USING BACTERIA)</td>
<td>Negative</td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Regulation (EC) 440/2008 B.14 (REVERSE MUTATION TEST USING BACTERIA)</td>
<td>Negative</td>
</tr>
<tr>
<td>Carcinogenicity:</td>
<td></td>
<td></td>
<td></td>
<td>Human being</td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Reproductive toxicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Aspiration hazard:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td>Respiratory tract irritation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td>Repeated dose toxicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td>Other information:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Classification based on toxicological analyses.</td>
</tr>
</tbody>
</table>

#### tau-fluvalinate

<table>
<thead>
<tr>
<th>Toxicity/effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>261-282</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by dermal route:</td>
<td>LD50</td>
<td>&gt;2000</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td>LD50</td>
<td>&gt;2000</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td>Mild irritant</td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td>Not sensitising</td>
<td></td>
</tr>
</tbody>
</table>
### Hydrocarbons, C9, aromatics

<table>
<thead>
<tr>
<th>Toxicity/effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>&gt;2000-&lt;5000</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by dermal route:</td>
<td>LD50</td>
<td>&gt;2000</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation:</td>
<td>LD50</td>
<td>&gt;2000</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td></td>
<td>Mild irritant, repeated exposure may cause skin dryness or cracking.</td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not irritant</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not sensitising</td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Carcinogenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Reproductive toxicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Specific target organ toxicity -</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>May cause drowsiness or dizziness, May cause respiratory irritation.</td>
</tr>
<tr>
<td>single exposure (STOT-SE):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspiration hazard:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Respiratory tract irritation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Irritant</td>
</tr>
<tr>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Methanol

<table>
<thead>
<tr>
<th>Toxicity/effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>ATE</td>
<td>300</td>
<td>mg/kg</td>
<td>Human being</td>
<td></td>
<td>Experiences on persons.</td>
</tr>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD0</td>
<td>143</td>
<td>mg/kg</td>
<td>Human being</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>&gt;5000</td>
<td>mg/kg</td>
<td>Rat</td>
<td>IUCLID Chem. Data Sheet (ESIS)</td>
<td>Not relevant for classification.</td>
</tr>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>85</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td></td>
<td>Not relevant for classification.</td>
</tr>
<tr>
<td>Skin corrosion/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td></td>
<td>Mild irritant</td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td>OECD 405 (Acute Eye Irritation/Corrosion)</td>
<td>Mild irritant</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td>OECD 406 (Skin Sensitisation)</td>
<td>Not sensitising</td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OECD 471 (Bacterial Reverse Mutation Test)</td>
<td>Negative</td>
</tr>
<tr>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>abdominal pain, vomiting, headaches, gastrointestinal disturbances, drowsiness, visual disturbances, watering eyes, nausea, mental confusion</td>
<td></td>
</tr>
</tbody>
</table>
### Propane-1,2-diol

<table>
<thead>
<tr>
<th>Toxicity/effect</th>
<th>Endpoint</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>&gt;2000</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by dermal route:</td>
<td>LD50</td>
<td>&gt;2000</td>
<td>mg/kg</td>
<td>Rabbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>317,042</td>
<td>mg/l/2h</td>
<td>Rabbit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity (in vitro):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Revolt

**SECTION 12: ECOLOGICAL INFORMATION**
Possibly more information on environmental effects, see Section 2.1 (classification).

<table>
<thead>
<tr>
<th>Toxicity/effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>&gt;0,001</td>
<td>mg/l</td>
<td>Oncorhynchus mykiss</td>
<td>OECD 203 (Fish, Acute Toxicity Test)</td>
<td></td>
</tr>
<tr>
<td>Toxicity to fish:</td>
<td>NOEC/NOEL</td>
<td></td>
<td>0,0000005</td>
<td>mg/l</td>
<td>Pimephales promelas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia:</td>
<td>EC50</td>
<td>48h</td>
<td>0,00259</td>
<td>µg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia:</td>
<td>NOEC/NOEL</td>
<td></td>
<td>0,021</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>EbC50</td>
<td>72h</td>
<td>42</td>
<td>mg/l</td>
<td>Scenedesmus subspicatus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>ErC50</td>
<td>72h</td>
<td>42</td>
<td>mg/l</td>
<td>Scenedesmus subspicatus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td>Bioaccumulative potential:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td>Mobility in soil:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td>Results of PBT and vPvB assessment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td>Other adverse effects:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
<tr>
<td>Toxicity to bacteria:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
</tr>
</tbody>
</table>
### Tau-Fluvalinate

<table>
<thead>
<tr>
<th>Toxicity/effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>0,0403</td>
<td>mg/l</td>
<td>Oncorhynchus mykiss</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia:</td>
<td>LC50</td>
<td>48h</td>
<td>0,00085</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>ErC50</td>
<td>72h</td>
<td>19,6</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to bacteria:</td>
<td>EC50</td>
<td>3h</td>
<td>&gt;1000</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water solubility:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Insoluble</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Hydrocarbons, C9, aromatics

<table>
<thead>
<tr>
<th>Toxicity/effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>9,22</td>
<td>mg/l</td>
<td>Oncorhynchus mykiss</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia:</td>
<td>EC50</td>
<td>48h</td>
<td>21,3</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>EC50</td>
<td>72h</td>
<td>2,6-2,9</td>
<td>mg/l</td>
<td>Pseudokirchnerie lla subcapitata</td>
<td>OECD 301 B (Ready Biodegradability - CO₂ Evolution Test)</td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability:</td>
<td>28d</td>
<td>54-56%</td>
<td>%</td>
<td>OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)</td>
<td>No PBT substance, No vPvB substance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Methanol

<table>
<thead>
<tr>
<th>Toxicity/effect</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>15400</td>
<td>mg/l</td>
<td>Lepomis macrochirus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia:</td>
<td>EC50</td>
<td>48h</td>
<td>&gt;10000</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>IC50</td>
<td>72h</td>
<td>8000</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability:</td>
<td>BOD5/COD</td>
<td>&lt;50%</td>
<td>%</td>
<td>Chlorella vulgaris</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioaccumulative potential:</td>
<td>BCF</td>
<td>28400</td>
<td>Chlorella vulgaris</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other information:</td>
<td>DOC</td>
<td>&lt;70%</td>
<td>%</td>
<td></td>
<td></td>
<td>Readily biodegradable</td>
<td></td>
</tr>
<tr>
<td>Other information:</td>
<td>BOD</td>
<td>&gt;60%</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

**For the substance / mixture / residual amounts**

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product. Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2001/118/EC, 2001/119/EC, 2001/573/EC).

02 01 08 agrochemical waste containing dangerous substances. 07 04 01 aqueous washing liquids and mother liquors. 20 01 19 pesticides.

**Recommendation:**
Pay attention to local and national official regulations e.g. suitable incineration plant, dispose at suitable refuse site.

**For contaminated packing material**

Pay attention to local and national official regulations. Empty container completely. Dispose of packaging that cannot be cleaned in the same manner as the substance.

### SECTION 14: TRANSPORT INFORMATION

#### General statements

UN number: 3082

#### Transport by road/by rail (ADR/RID)

**UN proper shipping name:**
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TAU-FLUVALINATE, SOLVENT NAPHTHA)

**Transport hazard class(es):** 9

**Packing group:** III

**Classification code:** M6

**LQ (ADR 2013):** 5 L

**LQ (ADR 2009):** 7

**Environmental hazards:** environmentally hazardous

**Tunnel restriction code:** E

#### Transport by sea (IMDG-code)

**UN proper shipping name:**
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TAU-FLUVALINATE, SOLVENT NAPHTHA)

**Transport hazard class(es):** 9

**Packing group:** III

**EmS:** F-A, S-F

**Marine pollutant:** Yes

**Environmental hazards:** environmentally hazardous

<table>
<thead>
<tr>
<th>Propane-1,2-diol</th>
<th>Endpoint</th>
<th>Time</th>
<th>Value</th>
<th>Unit</th>
<th>Organism</th>
<th>Test method</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>&gt;1000</td>
<td>mg/l</td>
<td>Pimephales promelas</td>
<td>OECD 203 (Fish, Acute Toxicity Test)</td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia:</td>
<td>EC50</td>
<td>48h</td>
<td>&gt;1000</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td>OECD 202 (Daphnia sp. Acute Immobilisation Test)</td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>EC50</td>
<td>72h</td>
<td>&gt;1000</td>
<td>mg/l</td>
<td>Selenastrum capricornutum</td>
<td>OECD 201 (Alga, Growth Inhibition Test)</td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability:</td>
<td>EC50</td>
<td>28d</td>
<td>81</td>
<td>%</td>
<td></td>
<td>OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)</td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability:</td>
<td>IC50</td>
<td>30min</td>
<td>&gt;1000</td>
<td>mg/l</td>
<td></td>
<td>OECD 301 C (Ready Biodegradability - Modified MITI Test (I))</td>
<td></td>
</tr>
<tr>
<td>Bioaccumulative potential:</td>
<td>BCF</td>
<td></td>
<td>&lt;100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Results of PBT and vPvB assessment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.a.</td>
<td></td>
</tr>
<tr>
<td>Toxicity to bacteria:</td>
<td>EC50</td>
<td>3h</td>
<td>&gt;1000</td>
<td>mg/l</td>
<td>activated sludge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to bacteria:</td>
<td>IC50</td>
<td>30min</td>
<td>&gt;1000</td>
<td>mg/l</td>
<td>activated sludge</td>
<td>OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))</td>
<td></td>
</tr>
<tr>
<td>Other information:</td>
<td>COD</td>
<td></td>
<td>1,585</td>
<td>mg/g</td>
<td></td>
<td></td>
<td>Mixable</td>
</tr>
<tr>
<td>Water solubility:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Transport by air (IATA)**
UN proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (TAU-FLUVALINATE, SOLVENT NAPHTHA)
Transport hazard class(es): 9
Packing group: III
Environmental hazards: environmentally hazardous

**Special precautions for user**
Persons employed in transporting dangerous goods must be trained. All persons involved in transporting must observe safety regulations. Precautions must be taken to prevent damage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Freighted as packaged goods rather than in bulk, therefore not applicable.
Minimum amount regulations have not been taken into account. Danger code and packing code on request.

**SECTION 15: REGULATORY INFORMATION**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
For classification and labelling see Section 2. Observe restrictions: Yes
Comply with trade association/occupational health regulations. Observe youth employment law (German regulation). Observe plant protection medium law. Observe incident regulations.

15.2 Chemical safety assessment
A chemical safety assessment is not provided for mixtures.

**SECTION 16: OTHER INFORMATION**
These details refer to the product as it is delivered. Revised sections: n.a.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

<table>
<thead>
<tr>
<th>Classification in accordance with regulation (EC) No. 1272/2008 (CLP)</th>
<th>Evaluation method used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute 1, H400</td>
<td>Classification based on test data</td>
</tr>
<tr>
<td>Aquatic Chronic 1, H410</td>
<td>Classification based on test data</td>
</tr>
</tbody>
</table>

The following phrases represent the posted R phrases / H phrases, Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Sections 2 and 3).
10 Flammable.
11 Highly flammable.
22 Harmful if swallowed.
23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
37 Irritating to respiratory system.
38 Irritating to skin.
39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
50 Very toxic to aquatic organisms.
50/53 Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
51 Toxic to aquatic organisms.
53 May cause long term adverse effects in the aquatic environment.
65 Harmful: may cause lung damage if swallowed.
66 Repeated exposure may cause skin dryness or cracking.
67 Vapours may cause drowsiness and dizziness.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H311 Toxic in contact with skin.
H315 Causes skin irritation.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H370 Causes damage to organs.
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.

Aquatic Chronic — Hazardous to the aquatic environment - chronic
Aquatic Acute — Hazardous to the aquatic environment - acute
Acute Tox. — Acute toxicity - oral
Skin Irrit. — Skin irritation
Flam. Liq. — Flammable liquid
Asp. Tox. — Aspiration hazard
STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation
STOT SE — Specific target organ toxicity - single exposure - narcotic effects
Acute Tox. — Acute toxicity - inhalation
Acute Tox. — Acute toxicity - dermal
STOT SE — Specific target organ toxicity - single exposure

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.
These statements were made by: Chemical Check GmbH, Chemical Check Platz 1-7, D-32839 Steinheim, Tel.: +49 5233 94 17 0, Fax: +49 5233 94 17 90
© by Chemical Check GmbH Gefahrstoffberatung.
SAFETY PRECAUTIONS

Operator Protection
Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment.
WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.
WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.
WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) when applying the product. However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher level of control.
AFTER CONTACT WITH SKIN, WASH IMMEDIATELY with plenty of water.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY with plenty of water and seek medical advice.
DO NOT BREATHE SPRAY.
WASH HANDS AND EXPOSED SKIN before meals and after work.

Environmental Protection
Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.
DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5m of the top of the bank of any static or flowing waterbody, or 1m of the top of a ditch which is dry at the time of application. DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1m of the top of the bank of a static or flowing waterbody. Aim spray away from water.

A PRODUCT IS NOT ELIGIBLE FOR BUFFER ZONE REDUCTION UNDER THE LERAP SCHEME.

HIGH RISK TO CERTAIN NON-TARGET INSECTS OR OTHER ARTHROPODS.

DO NOT SPRAY CEREALS within 6m of the field boundary.

Storage and Disposal
KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.
RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.

IMPORTANT INFORMATION

FOR PROFESSIONAL USE ONLY AS AN AGRICULTURAL INSECTICIDE
Crops/situations: Wheat (winter & spring), barley (winter & spring) and oilseed rape.
Maximum individual dose (L/product/ha) Maximum total dose (L/product/ha/crop) Maximum number of treatments Latest time of application Other specific restrictions
READ THE LABEL BEFORE USE. USING THIS PRODUCT in a MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

Adama Agricultural Solutions UK Ltd
Unit 15, Thatcham Business Village,
Colthrop Way, Thatcham, Berkshire RG19 4LW
Telephone: (01635) 860555
Technical Helpline: (01635) 876622
www.adama.com | ukenquiries@adama.com
For advice on medical emergencies, fires or major spills telephone the UK National Chemical Emergency Centre on 01865 407333

PROTECT FROM FROST
SHAKE WELL BEFORE USE
The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.
Batch No.: see packaging

Warning
Very toxic to aquatic life with long lasting effects. Keep out of reach of children. Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site except for empty, clean containers which can be disposed of as non-hazardous waste.
To avoid risks to human health and the environment, comply with the instructions for use.