1.1 Product identifier

Fox
480 g/l Bifenox

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

Relevant identified uses of the substance or mixture: 
Herbicide

Uses advised against:
Not applicable

1.3 Details of the supplier of the safety data sheet

Adama Agricultural Solutions UK Ltd Limited, Unit 15, Thatcham Business Village Colthrop Way, Thatcham Berkshire RG19 4LW, UK
Telephone: 01635 860555, Fax: 01635 861555
ukenquiries@adama.com

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:
---

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 Labeling according to Regulation (EC) 1272/2008 (CLP)

Warning

H410- Very toxic to aquatic life with long lasting effects.

P102- Keep out of reach of children.

P501- Dispose of contents/container to an approved waste disposal plant.

EUH208- Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

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:
Suspension concentrate

3.1 Substance
n.a.

3.2 Mixture

<table>
<thead>
<tr>
<th>Bifenoxy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration number (REACH)</td>
<td></td>
</tr>
<tr>
<td>Index</td>
<td></td>
</tr>
<tr>
<td>EINECS, ELINCS, NLP</td>
<td>255-894-7</td>
</tr>
<tr>
<td>CAS</td>
<td>CAS 42576-02-3</td>
</tr>
<tr>
<td>content %</td>
<td>30-50</td>
</tr>
</tbody>
</table>
4.1 Description of first aid measures

**Inhalation**
Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms.
If the person is unconscious, place in a stable side position and consult a doctor.

**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.
Never pour anything into the mouth of an unconscious person!

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

Symptomatic treatment
Antidote:
None known

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
OXides of phosphorus
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 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, sawdust) and dispose of according to Section 13.
Fill the absorbed material into lockable containers.

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 section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations
Ensure good ventilation.
Avoid contact with eyes or skin.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
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.
Not to be stored in gangways or stair wells.
Under all circumstances prevent penetration into the soil.
Only store at temperatures from 0°C to 54°C.

7.3 Specific end use(s)
No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Propane-1,2-diol
### Area of application

<table>
<thead>
<tr>
<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>
</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>
</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>
</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>
</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>
</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>
</tr>
<tr>
<td>Environment - freshwater</td>
<td></td>
<td>PNEC</td>
<td>260</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td>Environment - marine</td>
<td></td>
<td>PNEC</td>
<td>28</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td>Environment - sewage treatment plant</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>PNEC</td>
<td>572</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td>Environment - sediment, marine</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>PNEC</td>
<td>50</td>
<td>mg/kg</td>
<td></td>
</tr>
<tr>
<td>Environment - water, sporadic (intermittent) release</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:
- Chemical resistant protective gloves (EN 374).
- If applicable
  - Protective Neoprene® / polychloroprene gloves (EN 374).
Protective nitrile gloves (EN 374)
Protective PVC gloves (EN 374)
Minimum layer thickness in mm:
0.5
Permeation time (penetration time) in minutes:
120
The breakthrough times determined in accordance with EN 374 Part 3 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:
Normally not necessary.
with formation of mist.
Filter A2 P2 (EN 14387), code colour brown, white
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

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Liquid, Viscous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour:</td>
<td>Beige</td>
</tr>
<tr>
<td>Odour:</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odour threshold:</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH-value:</td>
<td>7,38 (1 %, CIPAC MT 75.3)</td>
</tr>
<tr>
<td>Melting point/freezing point:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flash point:</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>Not determined</td>
</tr>
<tr>
<td>Lower explosive limit:</td>
<td>Not determined</td>
</tr>
</tbody>
</table>
### Upper explosive limit:
Not determined

### Vapour pressure:
Not determined

### Vapour density (air = 1):
Not determined

### Density:
1.18 kg/l (OECD 109 (Density of Liquids and Solids), relative density)

### Bulk density:
Not determined

### Solubility(ies):
Not determined

### Water solubility:
Mixable

### Partition coefficient (n-octanol/water):
3.64 (20°C, OECD 107 (Partition Coefficient (n-octanol/water) - Shake Flask Method), Bifenox)

### Auto-ignition temperature:
440 °C (Regulation (EC) 440/2008 A.15. (AUTO-IGNITION TEMPERATURE (LIQUIDS AND GASES)))

### Decomposition temperature:
Not determined

### Viscosity:
- 0.119-0.6457 Pas (20°C, OECD 114 (Viscosity of Liquids))
- 0.1046-0.6848 Pas (40°C, OECD 114 (Viscosity of Liquids))

### Explosive properties:
Product is not explosive.

### Oxidising properties:
No

## 9.2 Other information

### Miscibility:
Not determined

### Fat solubility / solvent:
Not determined

### Conductivity:
Not determined

### Surface tension:
Not determined

### Solvents content:
Not determined

## SECTION 10: Stability and reactivity

### 10.1 Reactivity
The product has not been tested.

### 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.
Strong heat

### 10.5 Incompatible materials
See also section 7.
Avoid contact with strong oxidizing agents.
Avoid contact with strong alkalis.
Avoid contact with strong acids.

### 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).

<table>
<thead>
<tr>
<th>Fox</th>
<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></td>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>&gt;5004</td>
<td>mg/kg</td>
<td>Rat</td>
<td>OECD 401 (Acute Oral Toxicity)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute toxicity, by dermal route:</td>
<td>LD50</td>
<td>&gt;2004</td>
<td>mg/kg</td>
<td>Rat</td>
<td>OECD 402 (Acute Dermal Toxicity)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>&gt;1,43</td>
<td>mg/l/4h</td>
<td>Rat</td>
<td>U.S. EPA 81-3</td>
<td>Maximum achievable concentration.</td>
</tr>
<tr>
<td></td>
<td>Skin corrosion/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td>OECD 404 (Acute Dermal Irritation/Corrosion)</td>
<td>Not irritant</td>
</tr>
<tr>
<td></td>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td>OECD 405 (Acute Eye Irritation/Corrosion)</td>
<td>Slightly irritant</td>
</tr>
<tr>
<td></td>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td>OECD 406 (Skin Sensitisation)</td>
<td>Not sensitizising</td>
</tr>
<tr>
<td></td>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carcinogenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reproductive toxicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aspiration hazard:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Respiratory tract irritation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Repeated dose toxicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.d.a.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other information:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Classification based on toxicological analyses.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bifenox</th>
<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></td>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>&gt;6400</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute toxicity, by oral route:</td>
<td>LD50</td>
<td>4556</td>
<td>mg/kg</td>
<td>Mouse</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<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></td>
<td>Acute toxicity, by inhalation:</td>
<td>LC50</td>
<td>&gt;0.91</td>
<td>mg/l</td>
<td>Rabbit</td>
<td></td>
<td>Not irritant</td>
</tr>
<tr>
<td></td>
<td>Skin corrosion/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td></td>
<td>Not irritant</td>
</tr>
<tr>
<td></td>
<td>Serious eye damage/irritation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td></td>
<td>Not irritant</td>
</tr>
<tr>
<td></td>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td></td>
<td>Not sensitizising</td>
</tr>
</tbody>
</table>
### 1,2-benzisothiazol-3(2H)-one

<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>375</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by dermal route:</td>
<td>ATE</td>
<td>500</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, by inhalation:</td>
<td>LD50</td>
<td>4115</td>
<td>mg/kg</td>
<td>Rat</td>
<td></td>
<td>Dust, Does not conform with EU classification.</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>Intensively irritant</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td>Sensitizing (skin contact)</td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>vomiting, headaches, gastrointestinal disturbances, nausea</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>(Draize-Test)</td>
<td>Not irritant</td>
</tr>
<tr>
<td>Skin corrosion/irritiation:</td>
<td></td>
<td></td>
<td></td>
<td>Rabbit</td>
<td>OECD 405 (Acute Eye Irritation/Corrosion)</td>
<td>Not irritant</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Guinea pig</td>
<td>Not sensitizising</td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitisation:</td>
<td></td>
<td></td>
<td></td>
<td>Human being</td>
<td>Not sensitizising</td>
<td></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>Germ cell mutagenicity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)</td>
<td>Negative</td>
</tr>
<tr>
<td>Symptoms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>eyes, reddened, mucous membrane irritation, dizziness, watering eyes, nausea</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 12: Ecological information
### Fox

<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>11</td>
<td>mg/l</td>
<td>Oncorhynchus mykiss</td>
<td>OECD 203 (Fish, Acute Toxicity Test)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOEC/NOEL</td>
<td>28d</td>
<td>0,638</td>
<td>mg/l</td>
<td>Oncorhynchus mykiss</td>
<td>OECD 204 (Fish, Prolonged Toxicity Test - 14-Day Study)</td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia:</td>
<td>NOEC/NOEL</td>
<td>21d</td>
<td>280</td>
<td>µg/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>48h</td>
<td>34,8</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>ErC50</td>
<td>48h</td>
<td>0,71</td>
<td>µg/l</td>
<td>Desmodesmus subspicatus</td>
<td>OECD 201 (Alga, Growth Inhibition Test)</td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>EbC50</td>
<td>72h</td>
<td>0,72</td>
<td>µg/l</td>
<td>Desmodesmus subspicatus</td>
<td>OECD 201 (Alga, Growth Inhibition Test)</td>
<td></td>
</tr>
</tbody>
</table>

- Persistence and degradability: n.d.a.
- Bioaccumulative potential: n.d.a.
- Mobility in soil: n.d.a.
- Results of PBT and vPvB assessment: n.d.a.
- Other adverse effects: n.d.a.

### Bifenox

<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>0,67</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>0,66</td>
<td>mg/l</td>
<td>Daphnia magna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>EC50</td>
<td>72h</td>
<td>0,000 18</td>
<td>mg/l</td>
<td>Scenedesmus subspicatus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioaccumulative potential:</td>
<td>Log Pow</td>
<td>4,5</td>
<td></td>
<td></td>
<td>1,2-benzisothiazol-3(2H)-one</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ADAMA**
<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>1,3-1,6</td>
<td>mg/l</td>
<td><em>Salmo gairdneri</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>2,18</td>
<td>mg/l</td>
<td><em>Oncorhynchus mykiss</em></td>
<td>OECD 203 (Fish, Acute Toxicity Test)</td>
<td></td>
</tr>
<tr>
<td>Toxicity to fish:</td>
<td>LC50</td>
<td>96h</td>
<td>3,4</td>
<td>mg/l</td>
<td><em>Lepomis macrochirus</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to daphnia:</td>
<td>EC50</td>
<td>48h</td>
<td>1,5-3,3</td>
<td>mg/l</td>
<td><em>Daphnia magna</em></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>0,15</td>
<td>mg/l</td>
<td><em>Chlorella vulgaris</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>EC50</td>
<td>96h</td>
<td>0,055</td>
<td>mg/l</td>
<td><em>Pseudokirchneriella subcapitata</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to algae:</td>
<td>Erc50</td>
<td>72h</td>
<td>0,11</td>
<td>mg/l</td>
<td><em>Pseudokirchneriella subcapitata</em></td>
<td>OECD 201 (Alga, Growth Inhibition Test)</td>
<td></td>
</tr>
<tr>
<td>Bioaccumulative potential:</td>
<td>Log Pow</td>
<td></td>
<td>1,11</td>
<td></td>
<td></td>
<td></td>
<td>A notable biological accumulation potential is not to be expected (LogPow 1-3).</td>
</tr>
<tr>
<td>Toxicity to bacteria:</td>
<td>EC50</td>
<td>16h</td>
<td>0,4</td>
<td>mg/l</td>
<td><em>Pseudomonas putida</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<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;1000</td>
<td>mg/l</td>
<td><em>Pimephales promelas</em></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><em>Daphnia magna</em></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><em>Selenastrum capricornutum</em></td>
<td>OECD 201 (Alga, Growth Inhibition Test)</td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability:</td>
<td>28d</td>
<td>81</td>
<td>%</td>
<td></td>
<td></td>
<td>OECD 301 F (Ready Biodegradability - Manometric Respirometry Test)</td>
<td></td>
</tr>
</tbody>
</table>
### Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

Revised on / Version: 11.02.2015 / 0002  
Replaces revision of / Version: 14.08.2013 / 0001  
Valid from: 11.02.2015  
PDF print date: 13.02.2015

### Persistence and degradability:

<table>
<thead>
<tr>
<th>28d</th>
<th>87-92%</th>
<th>OECD 301 C (Ready Biodegradability - Modified MITI Test (I))</th>
</tr>
</thead>
</table>

### Bioaccumulative potential:

| BCF | <100 |

### Results of PBT and vPvB assessment:

| n.a. |

### Toxicity to bacteria:

| EC50 | 3h >1000 mg/l activated sludge |
| IC50 | 30min >1000 mg/l activated sludge |

| COD | 1,585 mg/g |

### Water solubility:

| Mixable |

### 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  

Recommmendation:  
Pay attention to local and national official regulations  
E.g. suitable incineration plant.  
E.g. 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.  
15 01 02 plastic packaging

### SECTION 14: Transport information

**General statements**

UN number: 3082

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

UN proper shipping name:
UN 3082  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BIFENOX)

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. (BIFENOX)

Transport hazard class(es): 9
Packing group: III
EmS: F-A, S-F
Marine Pollutant: Yes
Environmental hazards: environmentally hazardous

Transport by air (IATA)

UN proper shipping name:
Environmentally hazardous substance, liquid, n.o.s. (BIFENOX)

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.
Comply with special provisions.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
National rules/regulation for the compliance with maximum quantities with regard to phosphates and or phosphorous compounds must be observed and complied with.
For classification and labelling see Section 2.
Observe restrictions:
Comply with trade association/occupational health 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: 2, 3, 8, 11, 12
Observe plant protection medium law.

**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 Section 2 and 3).
22 Harmful if swallowed.
38 Irritating to skin.
41 Risk of serious damage to eyes.
43 May cause sensitization by skin contact.
50 Very toxic to aquatic organisms.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
53 May cause long-term adverse effects in the aquatic environment.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H400 Very toxic to aquatic life.
H410 Very 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
Eye Dam. — Serious eye damage
Skin Sens. — Skin sensitization

Any abbreviations and acronyms used in this document:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>Article Categories</td>
</tr>
<tr>
<td>acc., acc.</td>
<td>according, according to</td>
</tr>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>AOEL</td>
<td>Acceptable Operator Exposure Level</td>
</tr>
</tbody>
</table>
SVHC Substances of Very High Concern
Tel. Telephone
ThOD Theoretical oxygen demand
TOC Total organic carbon
TRGS Technische Regeln für Gefahrstoffe (=Technical Regulations for Hazardous Substances)
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VbF Verordnung über brennbare Flüssigkeiten (= Regulation for flammable liquids (Austria))
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
WHO World Health Organization
wet weight

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
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