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

1.1 Product identifier
   Trade name : RELYON VIRKON
   Product code : 57768022

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

1.3 Details of the supplier of the safety data sheet
   Supplier : Antec International Limited
              Windham Road
              Chilton Industrial Estate
              CO10 2XD Sudbury / Suffolk, United Kingdom
   Telephone : +4922188852288

1.4 Emergency telephone number
   0870 190 6777. National Chemical Emergency Centre

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   | Skin irritation, Category 2 | H315: Causes skin irritation. |
   | Serious eye damage, Category 1 | H318: Causes serious eye damage. |
   | Long-term (chronic) aquatic hazard, Category 3 | H412: Harmful to aquatic life with long lasting effects. |

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
   Hazard pictograms :
   Signal word : Danger
   Hazard statements : H315 Causes skin irritation.  
                       H318 Causes serious eye damage.  
                       H412 Harmful to aquatic life with long lasting effects.
Precautionary statements:

Prevention:
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response:
P302 + P352 IF ON SKIN: Wash with plenty of 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/doctor.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

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

Hazardous components which must be listed on the label:
pentapotassium bis(peroxymonosulphate) bis(sulphate)
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts
potassium hydrogensulphate
dipotassium disulphate

Additional Labelling
EUH208 Contains dipotassium peroxydisulphate, dipentene. May produce an allergic reaction.

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pentapotassium bis(peroxymonosulphate) bis(sulphate)</td>
<td>70693-62-8</td>
<td>274-778-7</td>
<td>01-2119485567-22</td>
<td>Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Chronic 3; H412</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts</td>
<td>68411-30-3</td>
<td>270-115-0</td>
<td></td>
<td>Acute Tox. 4; H302 Skin Irrit. 2; H315</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:
Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
If inhaled:
- If unconscious, place in recovery position and seek medical advice.
- If symptoms persist, call a physician.

In case of skin contact:
- If skin irritation persists, call a physician.
- If on skin, rinse well with water.
- If on clothes, remove clothes.

In case of eye contact:
- Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
- In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Continue rinsing eyes during transport to hospital.
- Remove contact lenses.
- Protect unharmed eye.
- Keep eye wide open while rinsing.
- If eye irritation persists, consult a specialist.

If swallowed:
- Keep respiratory tract clear.
- Do NOT induce vomiting.
- Do not give milk or alcoholic beverages.
- Never give anything by mouth to an unconscious person.
- If symptoms persist, call a physician.
- Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed
None known.

4.3 Indication of any immediate medical attention and special treatment needed
Treatment:
- No special measures required.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media:
- In case of fire, use water spray (fog), foam or dry chemical.

Unsuitable extinguishing media:
- Carbon dioxide (CO2)
- High volume water jet

5.2 Special hazards arising from the substance or mixture
Specific hazards during firefighting:
- Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products:
- Sulphur oxides
- Metal oxides
- Carbon dioxide (CO2)
- Carbon monoxide
- Nitrogen oxides (NOx)
- Halogenated compounds
5.3 Advice for firefighters

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing dust.

6.2 Environmental precautions

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. 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: Neutralize with chalk, alkali solution or ammonia. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8.
For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Protect from moisture. Avoid formation of respirable particles. Do not breathe vapours/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion: Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures: When using do not eat or drink. When using do not smoke.
Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers: Protect from moisture. Combustible substances Strong bases

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage: Do not store near acids.

Further information on storage stability: Keep in a dry place. No decomposition if stored and applied as directed.

7.3 Specific end use(s)
Specific use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures
This information is not available.

Personal protective equipment
Eye protection: Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection
Material: Butyl rubber - IIR
Wearing time: < 60 min

Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves. After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations

Skin and body protection: Wear suitable protective clothing.
Dust impervious protective suit
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection: In the case of dust or aerosol formation use respirator with an approved filter.

Filter type: Recommended Filter type: ABEK-P2-filter

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: powder

Colour: pink

Odour: pleasant, sweet

Odour Threshold: No data available

pH: 2.35 - 2.65
   Concentration: 1 %

Melting point/freezing point: No data available

Boiling point/boiling range: No data available

Flash point: No data available

Evaporation rate: No data available

Flammability (solid, gas): No data available

Upper explosion limit: No data available

Lower explosion limit: No data available

Vapour pressure: No data available

Relative vapour density: No data available

Relative density: No data available

Density: 1.07 g/cm³ (20 °C)

Solubility(ies)
   Water solubility: 65 g/l

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

Ignition temperature: No data available
Decomposition temperature: > 50 °C
Viscosity: No data available
Explosive properties: No data available
Oxidizing properties: No data available

9.2 Other information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No decomposition if stored and applied as directed.

10.2 Chemical stability
No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions
Hazardous reactions: No decomposition if stored and applied as directed.

10.4 Conditions to avoid
Conditions to avoid: Exposure to moisture

10.5 Incompatible materials
Materials to avoid: Incompatible with acids. Strong bases Combustible substances Halogenated compounds Oxidizing agents brass Copper Cyanides Metal salt.

10.6 Hazardous decomposition products
Hazardous decomposition products: Oxygen Chlorine Sulphur oxides Hypochlorites
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

**Product:**

**Acute oral toxicity**

: LD50 (Rat): 4.123 mg/kg
  Method: OECD Test Guideline 401

**Acute inhalation toxicity**

: LC50 (Rat): > 3.7 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
  Method: OECD Test Guideline 403
  Assessment: The substance or mixture has no acute inhalation toxicity
  Remarks: the particle size measurements of the product indicate that it is not respirable and therefore not bioavailable by the inhalation route.

**Acute dermal toxicity**

: LD50 (Rat): > 5.000 mg/kg
  Remarks: Extrapolation according to Regulation (EC) No. 440/2008

**Components:**

**pentapotassium bis(peroxymonosulphate) bis(sulphate):**

**Acute oral toxicity**

: LD50 (Rat, male and female): 500 mg/kg
  Method: OECD Test Guideline 423

**Acute inhalation toxicity**

: LC0 (Rat, male): > 5 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
  Method: OECD Test Guideline 403
  Assessment: The substance or mixture has no acute inhalation toxicity
  Remarks: Highest producible concentration.

**Acute dermal toxicity**

: LD50 (Rat, male and female): > 5.000 mg/kg
  Method: OECD Test Guideline 402
  Remarks: Extrapolation according to Regulation (EC) No. 440/2008

**Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:**

**Acute oral toxicity**

: LD50 (Rat, male and female): 1.220 mg/kg
  Method: OECD Test Guideline 401

**Acute dermal toxicity**

: LD50 (Rat, male and female): > 5.000 mg/kg
  Method: OECD Test Guideline 402
  GLP: yes
  Remarks: Extrapolation according to Regulation (EC) No.
malic acid:
Acute oral toxicity : LD50 (Rat, male and female): 3.500 mg/kg
Method: OECD Test Guideline 401
GLP: no

Acute inhalation toxicity : LC0 (Rat, male and female): > 1,306 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: Highest producible concentration.

Acute dermal toxicity : LD50 (Rabbit, female): > 5.000 mg/kg
Method: OECD Test Guideline 401
GLP: no

sulphamidic acid:
Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Remarks: Extrapolation according to Regulation (EC) No. 440/2008

sodium toluenesulphonate:
Acute oral toxicity : LD50 (Rat): 6.500 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg

potassium hydrogensulphate:
Acute oral toxicity : LD50 (Rat): 2.340 mg/kg

dipotassium peroxodisulphate:
Acute oral toxicity : LD50 (Rat): 700 mg/kg
  Acute toxicity estimate: 500 mg/kg
  Method: Converted acute toxicity point estimate

Acute inhalation toxicity : LC0 (Rat): > 2.95 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Remarks: Highest producible concentration.

Acute dermal toxicity : LD50 (Rabbit): > 10.000 mg/kg
**dipotassium disulphate:**
Acute oral toxicity: LD50 (Rat, male): 2.140 mg/kg
   Method: OECD Test Guideline 401
   Remarks: Test results on an analogous product

Acute inhalation toxicity: Assessment: Corrosive to the respiratory tract.
   Assessment: The component/mixture is toxic after short term inhalation.

**dipentene:**
Acute oral toxicity: LD50 (Rat): 5.300 mg/kg
Acute dermal toxicity: LD50 (Rat): > 5.000 mg/kg

**Skin corrosion/irritation**

**Product:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

**Components:**

**pentapotassium bis(peroxymonosulphate) bis(sulphate):**
Species: Rabbit
Method: OECD Test Guideline 404
Result: Causes burns.

**Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

**malic acid:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

**sulphamidic acid:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

**sodium toluenesulphonate:**
Species: Rabbit
Result: Irritating to skin.
potassium hydrogensulphate:
Assessment: Causes burns.

**dipotassium peroxodisulphate:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

**dipotassium disulphate:**
Assessment: Causes severe burns.

dipentene:
Assessment: Irritating to skin.

**Serious eye damage/eye irritation**

**Components:**

**pentapotassium bis(peroxymonosulphate) bis(sulphate):**
Species: Rabbit
Method: OECD Test Guideline 405
Result: Risk of serious damage to eyes.

**Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:**
Species: Rabbit
Method: OECD Test Guideline 405
Result: Risk of serious damage to eyes.

**malic acid:**
Species: Rabbit
Method: OECD Test Guideline 405
Result: Irritating to eyes.

**sulphamidic acid:**
Species: Rabbit
Method: OECD Test Guideline 405
Result: Irritating to eyes.

**sodium toluenesulphonate:**
Species: Rabbit
Result: Irritating to eyes.

**dipotassium peroxodisulphate:**
Result: Irritating to eyes.
dipotassium disulphate:
Assessment: Risk of serious damage to eyes.

dipentene:
Species: Rabbit
Result: Irritating to eyes.

Respiratory or skin sensitisation

Product:
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

Exposure routes: Inhalation
Species: Mammal - species unspecified
Method: Expert judgement
Result: Does not cause respiratory sensitisation.

Components:
pentapotassium bis(peroxymonosulphate) bis(sulphate):
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

malic acid:
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.
GLP: yes

sulphamidic acid:
Result: Did not cause sensitisation on laboratory animals.

sodium toluenesulphonate:
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

**dipotassium peroxodisulphate:**
Exposure routes: Inhalation
Species: Mammal - species unspecified
Result: May cause sensitisation by inhalation.

Exposure routes: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: May cause sensitisation by skin contact.

**dipentene:**
Exposure routes: Dermal
Species: Guinea pig
Result: May cause sensitisation by skin contact.

**Germ cell mutagenicity**

**Components:**

**pentapotassium bis(peroxymonosulphate) bis(sulphate):**
Genotoxicity in vitro
- Test system: Mammalian-Animal
  - Metabolic activation: with and without metabolic activation
  - Method: OECD Test Guideline 476
  - Result: positive
  - GLP: yes

  Test system: Bacteria
  - Metabolic activation: with and without metabolic activation
  - Method: OECD Test Guideline 471
  - Result: negative
  - GLP: yes

  Test system: Mammalian-Human
  - Metabolic activation: with and without metabolic activation
  - Method: OECD Test Guideline 473
  - Result: positive
  - GLP: yes

Genotoxicity in vivo
- Species: Mammalian-Animal
  - Application Route: Oral
  - Method: OECD Test Guideline 474
  - Result: negative

**Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:**
Genotoxicity in vitro
- Test Type: Ames test
  - Test system: Bacteria
  - Metabolic activation: with and without metabolic activation
  - Result: negative
Genotoxicity in vivo  :  Test Type: Cytogenetic assay  
  Species: Mouse  
  Application Route: Oral  
  Result: negative

**malic acid:**
Genotoxicity in vitro  :  Remarks: Not mutagenic in a standard battery of genetic toxicological tests.

**sulphamidic acid:**
Genotoxicity in vitro  :
  Test system: Mammalian-Human  
  Metabolic activation: with and without metabolic activation  
  Method: OECD Test Guideline 487  
  Result: negative  
  GLP: yes  
  
  Test system: Mammalian-Animal  
  Metabolic activation: with and without metabolic activation  
  Method: OECD Test Guideline 476  
  Result: negative  
  
  Test system: Bacteria  
  Metabolic activation: with and without metabolic activation  
  Method: OECD Test Guideline 471  
  Result: negative

**sodium toluenesulphonate:**
Genotoxicity in vitro  :  Remarks: No mutagenic effect.

**dipotassium peroxodisulphate:**
Genotoxicity in vitro  :  Remarks: Not mutagenic in a standard battery of genetic toxicological tests.

**Carcinogenicity**

**Components:**

**Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:**
Species: Rat  
Application Route: Oral  
Exposure time: 2 Years  
Result: negative

**Reproductive toxicity**

**Components:**

**pentapotassium bis(peroxymonosulphate) bis(sulphate):**
Effects on foetal development: Remarks: No teratogenic or foetotoxic effects were found at all dose levels tested.

**Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:**
Effects on foetal development: Species: Rat, female
Application Route: Oral
Dose: 600 milligram per kilogram
Duration of Single Treatment: 15 d
Remarks: No known significant effects or critical hazards.

**malic acid:**
Effects on foetal development: Remarks: No known significant effects or critical hazards.

**STOT - single exposure**

**Components:**

**potassium hydrogen sulphate:**
Assessment: May cause respiratory irritation.

**dipotassium peroxodisulphate:**
Assessment: May cause respiratory irritation.

**Repeated dose toxicity**

**Components:**

**pentapotassium bis(peroxymonosulphate) bis(sulphate):**
Species: Rat, male and female
LOAEL: > 1.000 mg/kg
Application Route: Oral
Exposure time: 28 d
Number of exposures: 7 days/week
Method: OECD Test Guideline 407
Remarks: Subacute toxicity

Species: Rat, male and female
LOAEL: 600 mg/kg
Application Route: Oral
Exposure time: 90 d
Number of exposures: 7 days/week
Method: OECD Test Guideline 408
Remarks: Subchronic toxicity

**Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:**
Species: Rat, male and female
NOAEL: 50 mg/kg
Application Route: Oral
Exposure time: 84 d
Remarks: Subchronic toxicity

**malic acid:**
Remarks: No known significant effects or critical hazards.

**sodium toluenesulphonate:**
Species: Rat
NOAEL: 114 mg/kg
Application Route: Oral
Exposure time: 91 d
Method: OECD Test Guideline 408
Remarks: Subchronic toxicity

**Further information**

**Product:**
Remarks: No data available

### SECTION 12: Ecological information

#### 12.1 Toxicity

**Product:**

**Toxicity to fish**
- LC50 (Salmo salar (Atlantic salmon)): 24,6 mg/l
- Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 (Daphnia magna (Water flea)): 6,5 mg/l
- Exposure time: 48 h
- Method: OECD Test Guideline 202
- Remarks: Fresh water

**Toxicity to algae**
- NOEC (Desmodesmus subspicatus (green algae)): 6,25 mg/l
- Exposure time: 72 h
- Method: OECD Test Guideline 201
- Remarks: Fresh water

**Components:**

**pentapotassium bis(peroxymonosulphate) bis(sulphate):**

**Toxicity to fish**
- LC50 (Oncorhynchus mykiss (rainbow trout)): 53 mg/l
- Exposure time: 96 h
- Method: OECD Test Guideline 203
- GLP: yes
- Remarks: Fresh water

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 (Daphnia magna (Water flea)): 3,5 mg/l
- Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes
Remarks: Fresh water

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (microalgae)): > 1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

NOEC (Pseudokirchneriella subcapitata (microalgae)): 0,5 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 1,67 mg/l
Exposure time: 96 h
Method: OPPTS 850.1075

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,9 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes
Remarks: Fresh water

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 10 - 100 mg/l
Exposure time: 72 h

NOEC (Chlorella vulgaris (Fresh water algae)): 3,1 mg/l
Exposure time: 15 d

Toxicity to fish (Chronic toxicity) : NOEC: 1 mg/l
Exposure time: 28 d
Species: Lepomis macrochirus (Bluegill sunfish)
Method: OECD Test Guideline 204
GLP: no
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1,18 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211
GLP: no
Remarks: Fresh water

malic acid:
Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 100 mg/l
Exposure time: 96 h  
Method: OECD Test Guideline 203  
GLP: yes  
Remarks: Fresh water

**Toxicity to daphnia and other aquatic invertebrates**

EC50 (Daphnia magna (Water flea)): 240 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
GLP: yes  
Remarks: Fresh water

**Toxicity to algae**

EC50 (algae): > 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
GLP: yes  
Remarks: Fresh water

NOEC (algae): 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
GLP: yes  
Remarks: Fresh water

---

**sulphamidic acid:**

**Toxicity to fish**

LC50 (Pimephales promelas (fathead minnow)): 70,3 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
GLP: no  
Remarks: Fresh water

**Toxicity to daphnia and other aquatic invertebrates**

EC50 (Daphnia magna (Water flea)): 71,6 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
GLP: yes  
Remarks: Fresh water

**Toxicity to algae**

EC50 (Desmodesmus subspicatus (green algae)): 48 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
GLP: yes  
Remarks: Fresh water

NOEC (Desmodesmus subspicatus (green algae)): 18 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
GLP: yes  
Remarks: Fresh water

**Toxicity to microorganisms**

EC50: > 200 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
GLP: yes
Remarks: Fresh water

Toxicity to fish (Chronic toxicity):
NOEC: >= 60 mg/l
Exposure time: 34 d
Species: Danio rerio (zebra fish)
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
NOEC: 19 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

**sodium toluenesulphonate:**

Toxicity to fish:
LC50 (Oncorhynchus mykiss (rainbow trout)): > 490 mg/l
Exposure time: 96 h
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates:
EC50 (Daphnia magna (Water flea)): > 318 mg/l
Exposure time: 48 h
Remarks: Fresh water

Toxicity to algae:
EC50 (Desmodesmus subspicatus (green algae)): 245 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Fresh water

NOEC (Desmodesmus subspicatus (green algae)): 18 mg/l
Exposure time: 72 h
Remarks: Fresh water

**dipotassium peroxodisulphate:**

Toxicity to fish:
LC50 (Oncorhynchus mykiss (rainbow trout)): 76,3 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
EC50 (Daphnia magna (Water flea)): 120 mg/l
Exposure time: 48 h

Toxicity to algae:
EC50 (Pseudokirchneriella subcapitata (microalgae)): 83,7 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

**Ecotoxicology Assessment**

Long-term (chronic) aquatic hazard:
This product has no known ecotoxicological effects.

**dipotassium disulphate:**

Toxicity to fish:
LC50 (Pimephales promelas (fathead minnow)): 680 mg/l
Exposure time: 96 h
Remarks: Fresh water
### Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 720 mg/l  
Exposure time: 48 h  
Remarks: Fresh water

### Toxicity to algae

EC50 (Pseudokirchneriella subcapitata (microalgae)): 1.492 mg/l  
Exposure time: 96 h  
Remarks: Fresh water  

EC10 (Pseudokirchneriella subcapitata (microalgae)): 656 mg/l  
Exposure time: 96 h  
Remarks: Fresh water

### Toxicity to fish (Chronic toxicity)

NOEC: > 595 mg/l  
Exposure time: 7 Days  
Species: Pimephales promelas (fathead minnow)  
Remarks: Fresh water

### Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

NOEC: 790 mg/l  
Exposure time: 7 Days  
Species: Ceriodaphnia dubia (Water flea)  
Remarks: Fresh water

### dipentene:

#### Toxicity to fish

LC50 (Pimephales promelas (fathead minnow)): 0.702 mg/l  
Exposure time: 96 h  
Remarks: Fresh water

#### Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.421 mg/l  
Exposure time: 48 h  
Remarks: Fresh water

### M-Factor (Short-term (acute) aquatic hazard)

1

### M-Factor (Long-term (chronic) aquatic hazard)

1

### 12.2 Persistence and degradability

**Components:**

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Biodegradability: Result: The methods for determining the biological degradability are not applicable to inorganic substances.
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

**Biodegradability**
- Test Type: aerobic
- Inoculum: activated sludge
- Concentration: 34.3 mg/l
- Result: Readily biodegradable.
- Biodegradation: 83 %
- Exposure time: 28 d
- Method: OECD Test Guideline 301B
- GLP: yes

malic acid:

**Biodegradability**
- Test Type: aerobic
- Result: Readily biodegradable.
- Biodegradation: 67.5 %
- Exposure time: 28 d
- Method: OECD Test Guideline 301B
- GLP: yes

sulphamidic acid:

**Biodegradability**
- Result: The methods for determining the biological degradability are not applicable to inorganic substances.

sodium toluenesulphonate:

**Biodegradability**
- Result: Not readily biodegradable.
- Biodegradation: 0 - 2 %
- Exposure time: 28 d
- Method: OECD Test Guideline 301C

dipotassium peroxodisulphate:

**Biodegradability**
- Result: The methods for determining the biological degradability are not applicable to inorganic substances.

dipotassium disulphate:

**Biodegradability**
- Result: The methods for determining the biological degradability are not applicable to inorganic substances.

dipentene:

**Biodegradability**
- Result: Not rapidly biodegradable

12.3 Bioaccumulative potential

**Components:**

pentapotassium bis(peroxymonosulphate) bis(sulphate):
- Partition coefficient: n-octanol/water: $\log Pow < 0.3$
- Method: OECD Test Guideline 117
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:
Partition coefficient: n-octanol/water
log Pow: 1.4
Method: OECD Test Guideline 123

malic acid:
Partition coefficient: n-octanol/water
log Pow: -1.26

sulphamidic acid:
Partition coefficient: n-octanol/water
log Pow: -4.34

12.4 Mobility in soil
No data available

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.

12.6 Other adverse effects
Product:
Additional ecological information: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product: The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging: Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
SECTION 14: Transport information

14.1 UN number
Not regulated as a dangerous good

14.2 UN proper shipping name
Not regulated as a dangerous good

14.3 Transport hazard class(es)
Not regulated as a dangerous good

14.4 Packing group
Not regulated as a dangerous good

14.5 Environmental hazards
Not regulated as a dangerous good

14.6 Special precautions for user / Additional advice
Hazard statements : Not dangerous cargo.
Keep dry.
Keep separated from foodstuffs.

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

International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Not applicable
15.2 Chemical safety assessment
not applicable

SECTION 16: Other information

Full text of H-Statements
H226 : Flammable liquid and vapour.
H272 : May intensify fire; oxidizer.
H302 : Harmful if swallowed.
H314 : Causes severe skin burns and eye damage.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H331 : Toxic if inhaled.
H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 : May cause respiratory irritation.
H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.
H412 : Harmful to aquatic life with long lasting effects.

Full text of other abbreviations
Acute Tox. : Acute toxicity
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
Ox. Sol. : Oxidizing solids
Resp. Sens. : Respiratory sensitisation
Skin Corr. : Skin corrosion
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
STOT SE : Specific target organ toxicity - single exposure

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals

Further information
Classification of the mixture: Skin Irrit. 2 Eye Dam. 1 Aquatic Chronic 3
Classification procedure: H315 H318 H412

Based on product data or assessment Calculation method Calculation method

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet and its Annex [if required according to Regulation (EC) 1907/2006 (REACH)] is to de-
scribe the products in terms of their safety requirements. The given details do not imply any guarantee concerning the composition, properties or performance.