SAFETY DATA SHEET
Potassium Sulphate

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

Date issued 19.11.2012

1.1. Product identifier
Product name Potassium Sulphate
Synonyms Potassium Sulfat

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/preparation Production of fertilizers.

1.3. Details of the supplier of the safety data sheet
Distributor
Company name Acinor AS
Office address Titangt. 13, NO-1630 Gamle Fredrikstad
Postal address Titangaten 13
Postcode 1630
City Gamle Fredrikstad
Country Norway
Tel 69384082
Fax 69384084
E-mail post@acinor.no
Website http://www.acinor.no
Enterprise no. NO 984 648 324 MVA
Contact person Rolf Egil de Flon

1.4. Emergency telephone number
Emergency telephone Toxic Information: 22 59 13 00

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to 67/548/EEC or 1999/45/EC Xi; R41
Substance / mixture hazardous properties Risk of serious damage to eyes.
Additional information on classification See section 16.

2.2. Label elements
Hazard symbol

R phrases R41 Risk of serious damage to eyes.
S phrases S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S39 Wear eye/face protection.
S46 If swallowed, seek medical advice immediately and show this container or label.

**Composition on the label**

Potassium hydrogen sulphate: 10 - 15 %

### 2.3. Other hazards

**PBT / vPvB**

PBT/vPvB assessment has not been performed.

**Health effect**

Prolonged or repeated exposure may cause permanent damage.

---

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

<table>
<thead>
<tr>
<th>Component name</th>
<th>Identification</th>
<th>Classification</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium sulfate</td>
<td>CAS no.: 7778-80-5</td>
<td>EC no.: 231-915-5</td>
<td>&gt; 85 %</td>
</tr>
<tr>
<td>Potassium hydrogen sulphate</td>
<td>CAS no.: 7646-93-7</td>
<td>EC no.: 231-594-1</td>
<td>Index no.: 016-056-00-4</td>
</tr>
</tbody>
</table>

**Remark, component**

CAS-nr.: 7778-80-5 Reach Reg.nr.: 01-2119489441-34.

**Component comments**

On grounds of experience and test data, the classification for this preparation is less stringent than the one imposed by the criteria referred to in the Norwegian regulation on classification and labeling of dangerous chemicals. Valid from June 21, 2010. See section 16 for explanation of H- and R-phrases listed above.

---

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**General**

If in doubt, seek medical advice.

**Inhalation**

Remove victim immediately from source of exposure. Rinse nose and mouth with water. Fresh air and rest. Get medical attention if any discomfort continues.

**Skin contact**

Remove contaminated clothing. Wash the skin immediately with soap and water. Get medical attention if any discomfort continues.

**Eye contact**

Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. By prolonged rinsing, use luke warm water to avoid damage to the eye. Transport to physician. Keep on flushing during transport.

**Ingestion**

Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. Seek medical attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

**Information for health personnel**

Treat Symptomatically.

**Acute symptoms and effects**

Inhalation: May cause respiratory irritation. The product may irritate skin and cause itching, burning and redness. Skin rash/inflammation. Risk of serious damage to eyes. May cause severe burning and pain in the eyes.

Ingestion: May irritate and cause stomach pain, vomiting and diarrhoea.

**Delayed symptoms and effects**

Prolonged or repeated exposure may cause permanent damage.

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

**Other Information**

No specific treatment required, see section 4.1.

---

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

**Suitable extinguishing media**

Use fire-extinguishing media appropriate for surrounding materials.

**Improper extinguishing media**

Do not use water jet.
5.2. Special hazards arising from the substance or mixture

<table>
<thead>
<tr>
<th>Fire and explosion hazards</th>
<th>The product is not classified as flammable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous combustion products</td>
<td>Toxic and corrosive gases/vapours. Oxides of sulphur (SOx).</td>
</tr>
</tbody>
</table>

5.3. Advice for firefighters

| Other Information | Containers close to fire should be removed immediately or cooled with water. Extinguishing water must not be discharged into drains. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| Personal precautions | Use protective equipment as referred to in section 8. Provide adequate ventilation. |

6.2. Environmental precautions

| Environmental precautions | Do not allow to enter into sewer, water system or soil. |

6.3. Methods and material for containment and cleaning up

| Methods for cleaning | Stop dust cloud by humidifying. Use mechanical handling equipment. Collect in a suitable container and dispose as hazardous waste according to section 13. |
| Cleaning up | Wash the contaminated surface with water. |

6.4. Reference to other sections

| Other instructions | See also sections 8 and 13. |

SECTION 7: Handling and storage

7.1. Precautions for safe handling

| Handling | Provide adequate ventilation. Use protective equipment as referred to in section 8. Container must be kept tightly closed. Avoid contact with skin and eyes. Use work methods which minimise aerosol production. Change contaminated clothing. |

| Protective Measures | Measures To Prevent fire Keep away from sources of ignition. Advice on general occupational hygiene Wash hands at the end of each work shift and before eating, smoking and using the toilet. Do not eat, drink or smoke during work. |

7.2. Conditions for safe storage, including any incompatibilities

| Storage | Store dry and cool in a well ventilated area. Store in tightly closed container. |
| Conditions To Avoid | Avoid heat. |
| Requirements for storage rooms and vessels | Use storage tank made of: Glass or ceramic material. Unsuitable containers: aluminium. Metal. |
| Hints on storage assembly | Keep away from: Metals. Strong alkali. |

7.3. Specific end use(s)

| Specific use(s) | See section 1.2. |

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Exposure limit values</th>
<th>Component name</th>
<th>Identification</th>
<th>Value</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total inhalable dust</td>
<td>8 h.: 10 mg/m³</td>
<td>2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respirable dust</td>
<td>8 h.: 5 mg/m³</td>
<td>2010</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8.2. Exposure controls

**Occupational exposure controls**

Provide adequate ventilation. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Respiratory protection**

Respiratory protection

In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P2).

**Hand protection**

Hand protection

Use chemical resistant gloves.

Suitable gloves type


Breakthrough time

Penetration time is not known. The recommended material of gloves is recommended after a study of the single components in the product.

Additional hand protection measures

Change gloves frequently.

**Eye / face protection**

Eye protection

Wear dust resistant safety goggles where there is danger of eye contact.

**Skin protection**

Skin protection (other than of the hands)

Wear appropriate clothing to prevent any possibility of skin contact.

**Appropriate environmental exposure control**

Environmental exposure controls

Do not allow to enter into sewer, water system or soil. See also section 12.

**Other Information**

Other Information

Eye wash facilities must be available when handling this product. Emergency shower should be available at the workplace. The listed protective equipment is a recommendation. A risk assessment of the actual risk may lead to other requirements.

---

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Crystalline powder.</td>
</tr>
<tr>
<td>Colour</td>
<td>White. / Colourless.</td>
</tr>
<tr>
<td>Odour</td>
<td>No characteristic odour.</td>
</tr>
<tr>
<td>Comments, Odour limit</td>
<td>Not available.</td>
</tr>
<tr>
<td>Comments, pH (as supplied)</td>
<td>Acidic.</td>
</tr>
<tr>
<td>Comments, pH (aqueous solution)</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Comments, Melting point / melting range</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Comments, Boiling point / boiling range</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Comments, Flash point</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Comments, Evaporation rate</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Comments, Explosion limit</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Comments, Vapour pressure</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Comments, Vapour density</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Value: &gt; 2,3 g/cm³</td>
</tr>
<tr>
<td>Comments, Specific gravity</td>
<td>Valid for density.</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Soluble.</td>
</tr>
<tr>
<td>Comments, Partition coefficient: n-octanol / water</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Comments, Spontaneous combustability</td>
<td>Not entered.</td>
</tr>
<tr>
<td>Comments, Decomposition temperature</td>
<td>Not entered.</td>
</tr>
</tbody>
</table>
Comments, Viscosity
Not entered.

Physical hazards
Explosive properties
Not entered.
Oxidising properties
Not entered.

9.2. Other information
Other physical and chemical properties
Comments
No further information is available.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity
Hazardous polymerization will not occur.

10.2. Chemical stability
Stability
Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions
Arise in contact with incompatible materials (section 10.5) and inappropriate conditions (section 10.4).

10.4. Conditions to avoid
Conditions to avoid
Avoid heat.

10.5. Incompatible materials
Materials to avoid
Metals. Strong bases.

10.6. Hazardous decomposition products
Hazardous decomposition products
None under normal conditions. See also section 5.2.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Toxicological Information:

LD50 oral
Value: 2340 mg/kg
Test animal species: Rat

LD50 oral
Value: 6600 mg/kg
Test animal species: Rat
Comments: Toxic dose. Apply to CAS-n.:7778-80-5.

LD50 oral
Value: > 2000 mg/mkg
Test animal species: Rat
Comments: Toxic dose.

Other information regarding health hazards
General
This substance is corrosive. Prolonged exposure to the preparation may cause serious health effects.

Potential acute effects
Inhalation
Dust may irritate respiratory system or lungs.

Skin contact
The product may irritate the skin. Symptoms such as redness and itching of the skin may occur. May cause rash/inflammation.

Eye contact
Risk of serious damage to eyes. Immediate first aid is necessary. May cause severe burning and pain.

Ingestion
May irritate and cause stomach pain, vomiting and diarrhoea. May cause decreased renal function, and disturbances of heart rate.

Delayed effects / repeated exposure
Sensitisation
None of the substances mentioned in section 3 is considered to have sensitizing effects according to current labelling rules.

Carcinogenic, Mutagenic or Reprotoxic
Carcinogenicity None of the substances mentioned in section 3 is considered as carcinogenic according to current labelling rules.

Mutagenicity None of the substances mentioned in section 3 are considered to have mutagenic or pro-mutagenic effects.

Teratogenic properties None of the substances mentioned in section 3 are considered to cause harm to the unborn child.

Reproductive toxicity None of the substances mentioned in section 3 are considered to have genotoxic effects.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic, fish Value: 653-796 mg/l
Method of testing: LC50
Fish, species: Lepomis Macrochirus
Duration: 96 hours
Test reference: CAS-nr.: 7778-80-5

Acute aquatic, fish, Comments Value: 3500 mg/l
Method of testing: LC50
Fish, species: Leuciscus Idus
Duration: 96 hours
Test reference: CAS-nr.: 7646-93-7

Acute aquatic, Daphnia Value: 890 mg/l
Daphnia, species: Daphnia Magna
Duration: 48 hours
Test reference: CAS-nr.: 7778-80-5

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2. Persistence and degradability

Persistence and degradability The product contains inorganic compounds that are not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential Product is not expected to be bioaccumulative.

12.4. Mobility in soil

Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment

PBT assessment results PBT assessment has not been performed.

vPvB evaluation results vPvB assessment has not been performed.

12.6. Other adverse effects

Other adverse effects / Remarks Do not allow to enter into sewer, water system or soil. Not dangerous for the ozone layer.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal Disposed of as hazardous waste by approved contractor. The waste code (EWC-Code) is intended as a guide. The code must be chosen by the user, if the use differs from the one mentioned above.

Product classified as hazardous waste Yes

Packaging classified as hazardous waste Yes

EWC waste code EWC: 06 01 06 other acids
EWC: 15 01 10 packaging containing residues of or contaminated by dangerous substances
SECTION 14: Transport information

14.1. UN number
Comment: Not considered as dangerous goods under UN, IMO, ADR/RID or IATA/ICAO regulations.

14.2. UN proper shipping name
Comment: Not relevant.

14.3. Transport hazard class(es)
Comment: Not relevant.

14.4. Packing group
Comment: Not relevant.

14.5. Environmental hazards
Comment: Not relevant.

14.6. Special precautions for user
Special precautions for user: Not relevant.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Other applicable information: Not relevant.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
References (laws/regulations):
- Regulation on classification, labeling and packaging of substances and mixtures (CLP) dated 16.06.2012.
- Administrative norms for pollution of the atmosphere, the latest edition, from Norwegian labour inspection authority.
- Dangerous Goods regulations.

The Safety Data Sheet is based on information provided by the producer.

15.2. Chemical safety assessment
Chemical safety assessment has been carried out: No

SECTION 16: Other information

Supplier's notes: The information contained in this SDS must be made available to all those who handle the product.

List of relevant R phrases (under headings 2 and 3):
- R34 Causes burns.
- R37 Irritating to respiratory system.
- R41 Risk of serious damage to eyes.

List of relevant H-phrases (Section 2 and 3):
- H314 Causes Severe skin burns and eye damage.
- H335 May cause respiratory irritation.

Abbreviations and acronyms used:
- PBT: Persistent, Bioaccumulative and Toxic.
vPvB: very Persistent and very Bioaccumulative  
LC50: Concentration in water having 50% chance of causing death to aquatic life  
LD50: Lethal dose, is the amount of a substance given to a group of test animals, which causes the death of 50%.  
EC50: Median Effective Concentration, required to induce a 50% effect

<table>
<thead>
<tr>
<th>Further information</th>
</tr>
</thead>
<tbody>
<tr>
<td>On grounds of experience and test data, the classification for this preparation is less stringent than the one imposed by the criteria referred to in the Norwegian regulation on classification and labeling of dangerous chemicals. Valid from June 21, 2010</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sources of key data used to compile the safety data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers Safety data sheet dated: 17.04.2011</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information which has been added, deleted or revised</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Safety Data Sheet.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Checking quality of information</th>
</tr>
</thead>
<tbody>
<tr>
<td>This SDS is quality controlled by National Institute of Technology in Norway, certified according to the Quality Management System requirements specified in ISO 9001:2008.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Responsible for safety data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acinor AS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prepared by</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Institute of Technology as, Norway v/ Camilla M. Ormset</td>
</tr>
</tbody>
</table>