1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Potassium sulfate
Sulphate of potash
QROP™ SOP
Ultrasol™ SOP
Ultrasol™ SOP 52
Ultrasol™ SOP-WS

Recommended uses:
Industrial use of the product for formulation of preparations or mixtures of fertilizers and other agricultural chemicals.
Consumer end-use of fertilizers, plant protection products.

Restrictions on uses:
None identified

Supplier
SQM North America
2727 Paces Ferry Rd, Bldg Two, Suite 1425
Atlanta, GA 30339

Company Telephone/Fax
(770) 916 9400 / (770) 916 9404

Emergency Telephone Number
(800) 424 9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification of the chemical in accordance with 29CFR §1910.1200
Not classified as hazardous.

Label elements
Hazard pictograms
None applicable

Signal word
None applicable

Hazard Statements
None applicable

Precautionary Statements
None applicable

Other hazards
None

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS No</th>
<th>EC No</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium sulfate</td>
<td>7778-80-5</td>
<td>231-915-5</td>
<td>&gt; 94%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Description of first aid measures

General information
In case of persisting adverse effects consult a physician.
Never give anything by mouth to an unconscious person or a person with cramps.

In case of inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

In case of skin contact
Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.

In case of eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation occurs: Get medical advice/attention.

In case of ingestion
Rinse mouth and drink plenty of water.
Call a POISON CENTER or doctor/physician if you feel unwell.
Safety Data Sheet according to OSHA-GHS (29 CFR part 1910.1200 HCS 2012)

PRODUCT NAME: POTASSIUM SULFATE
Product Code: 005/04-US
Date of issue: November 2012
Supersedes: July 2008

Most important symptoms and effects, both acute and delayed

The following symptoms may occur:

- In case of inhalation: May be irritant to the respiratory tract
- In case of skin contact: May cause skin irritation
- In case of eye contact: May cause eye irritation
- In case of ingestion: Ingestion of large amounts may cause: Gastrointestinal disturbances

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Use any suitable mean for extinguishing surrounding fire.

Unsuitable material: None, but attention should be paid to compatibility with chemicals surrounding.

Specific hazards arising from the chemical

Thermal decomposition can lead to the escape of toxic/irritating gases and vapours.
Thermal decomposition products: Sulfur oxides fumes by extreme heating.

Protective equipment and precautions for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Provide adequate ventilation. Wear personal protection equipment.

Environmental precautions

Do not allow to enter into surface water or drains. Ensure waste is collected and contained.

Methods for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal or recovery.

Unsuitable material for taking up: None specified

Other information

None

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid generation of dust. Provide adequate ventilation. Wear personal protective equipment, when required.
Do not breathe dust. Wash hands before breaks and at the end of workday.
Do not eat, drink or smoke when using this product.
Keep away from food, drink and animal feeding stuff. Good hygiene practices and housekeeping measures.

Conditions for safe storage, including any incompatibilities

Reseal carefully any opened container and set upright to avoid leakages.
Keep/store only in original container. Keep the product tightly closed in a dry, in well-ventilated and cool place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Occupational exposure limits

Potassium sulfate:

<table>
<thead>
<tr>
<th>Source</th>
<th>PEL</th>
<th>STEL/ceiling</th>
<th>TWA</th>
<th>STEL/ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA</td>
<td>Not Established</td>
<td>Not Established</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td>Not Established</td>
<td>Not Established</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(2012 TLVs® and BEIs®)
Derived No-Effect Level (DNEL) suggested by the manufacturer

<table>
<thead>
<tr>
<th>Workers (industrial/professional):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL Human, dermal, long term:</td>
<td>21.3 mg/kg bw/day (systemic)</td>
</tr>
<tr>
<td>DNEL Human, inhalation, long term:</td>
<td>37.6 mg/m³/day (systemic)</td>
</tr>
</tbody>
</table>

Derived No-Effect Level (DNEL) is the level of exposure to the substance above which humans should not be exposed.

Engineering controls
Containment as appropriate. Good standard of general ventilation. Effective contaminant extraction.

Personal protective equipment
Eye / face protection  Chemical goggles.
Hand protection  Nitrile rubber gloves, suggested but not required to control risk.
Respiratory protection  Dust mask required in dusty environments or exceeding total dust limits.

Environmental exposure controls
Do not allow to enter into surface water or drains. Ensure waste is collected and contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid granular or crystalline</td>
</tr>
<tr>
<td>Colour</td>
<td>White (crystalline); tan (granular)</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>pH value</td>
<td>4.5 – 8.5 (5% aqueous solution)</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>1067°C / 1953°F at 1013 hPa (Literature information)</td>
</tr>
<tr>
<td>Boiling temperature / boiling range</td>
<td>1689°C / 3072°F at 1013 hPa (Literature information)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapourisation rate / Evaporation rate</td>
<td>Non volatile</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non flammable (Based on chemical structure)</td>
</tr>
<tr>
<td>Explosion limits (LEL, UEL)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density (bulk)</td>
<td>1.2 - 1.5 ton (metric)/m³</td>
</tr>
<tr>
<td>Solubility</td>
<td>&gt; 100 g/L at 20°C / 68°F (water)</td>
</tr>
<tr>
<td>Partition coefficient n-octanol /water</td>
<td>Not applicable (Based on chemical structure)</td>
</tr>
<tr>
<td>Auto Ignition temperature (AIT)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive (Based on chemical structure)</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not oxidising (Based on chemical structure)</td>
</tr>
</tbody>
</table>

Other information

None

10. STABILITY AND REACTIVITY

Reactivity
No hazardous reaction when handled and stored according to provisions.

Chemical stability
Stable under normal storage and temperature conditions.

Possibility of hazardous reactions
None identified.

Conditions to avoid
None specific identified.
Incompatible materials
None identified.

Hazardous decomposition products
Sulfur oxides fumes by extreme heating

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure (inhalation, ingestion, skin and eye contact)
Eye contact, skin contact and inhalation.
Exposure by ingestion is not expected to occur through normal industrial or professional use.

Symptoms related to the physical, chemical and toxicological characteristics
May be irritant to the skin, eyes and the respiratory tract. Ingestion of large amounts may cause gastrointestinal disturbances.

Information on toxicological effects from short and long term exposure

Acute toxicity
Species:
Method:
Acute oral toxicity LD50: > 2000 mg/kg bw Rat. OECD Guideline 423
Data obtained by analogy conclusion
Acute dermal toxicity LD50: > 2000 mg/kg bw Rat. OECD Guideline 402/EU B.3
Assessment / classification: Based on available data, the classification criteria are not met

Irritant and corrosive effects
Species:
Method:
Result: Species:
Primary irritation to the skin EU Method B.46 (In vitro skin irritation) Not irritating Not applicable
Irritation to eyes OECD guideline 405 Not irritating Rabbit (New Zealand White)
Assessment / classification: Based on available data, the classification criteria are not met

Respiratory or skin sensitisation
Species:
Method:
Result:
Skin sensitization OECD Guideline 429 Not sensitising Data obtained by analogy conclusion

Respiratory sensitisation No information available.
Assessment / classification: Based on available data, the classification criteria are not met

Germ cell mutagenicity / Genotoxicity
Species:
Method:
Result:
In-vitro genotoxicity OECD guideline 471 negative
Gene-mutations microrganisms OECD Guideline 476 negative
Gene-mutations mammalian cells Data obtained by analogy conclusion
Chromosome aberrat. mammalian cells OECD Guideline 473 negative

Reproductive toxicity
Species:
Method:
Result:
Adverse effects on reproduction OECD guideline 422 NOAEL: ≥ 1500 mg/kg bw/day
No effects were found on reproduction parameters, neither embryotoxic or developmental effects at highest dose tested. In 90-d and one generation studies with chemically related substances, no effects on fertility were observed.
Developmental toxicity / teratogenicity OECD guideline 422 NOAEL(development): ≥ 1500 mg/kg bw/day
No effects were found on reproduction parameters, neither embryotoxic or developmental effects at highest dose tested. In 90-d and one generation studies with chemically related substances, no effects were observed.
Assessment / classification: Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure)
Species:
Method:
Result:
Practical experience / human evidence
No relevant effects have been described after single exposure to the substance.
Assessment / classification: Based on available data, the classification criteria are not met
Specific target organ toxicity (repeated exposure)

OECD guideline 422
No effects were observed at highest dose tested.
Equivalent or similar to OECD guideline 453
Data obtained by analogy conclusion (ammonium sulphate)
Absolute spleen weights were decreased and relative liver weights were increased in high dose males.

Assessment / classification: Based on available data, the classification criteria are not met

Aspiration hazard
Physicochemical and toxicological data does not indicate a potential aspiration hazard.

Assessment / classification: Based on available data, the classification criteria are not met

Carcinogenicity
There is no evidence of carcinogenicity or genotoxicity with potassium sulphate. No evidence of a carcinogenic potential was observed in a study equivalent or similar to OECD guideline 453 with ammonium sulphate.

International Agency for Research on Cancer (IARC) Not listed
National Toxicology Program (NTP) Not listed
29 CFR part 1910, subpart Z Not listed

Assessment / classification: Based on available data, the classification criteria are not met

12. ECOLOGICAL INFORMATION

Ecotoxicity
Aquatic toxicity
96-h LC50  680 mg/L  Fish (Pimephales promelas)  (US EPA Guideline EPA/600/4-90/027)
48-h EC50  720 mg/L  Daphnia magna (Big water flea).  (US EPA Guideline EPA/600/4-90/027)
18-d EC50  > 100 mg/L  Chlorella vulgaris  (literature information)
3-h EC50  > 100 mg/L  Aquatic micro-organisms

Assessment / classification: Based on available data, the classification criteria are not met

Persistence and degradability
In aqueous solution, potassium sulphate is completely dissociated into the potassium ion (K⁺) and the sulfate anion (SO₄²⁻).
Hydrolysis of potassium sulfate does not occur.
Due to the inorganic nature of the substance standard testing systems are not applicable.

Bioaccumulative potential
Potassium sulfate completely dissociate in water forming potassium ions and sulfate anions. Potassium sulfate has a low potential for bioaccumulation based on physicochemical properties.

Mobility in soil
Based on the high water solubility and the ionic nature, potassium sulphate is not expected to adsorb, however, due to ion exchange process, sulfates can be retained in soil, both by incorporation into organic matter (e. g. as sulfate esters of humic acids) and adsorbed to soil particles such as hydrous iron and aluminum sesquioxides.

Other adverse effects
None specified.

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable federal and state laws.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal method in compliance with applicable regulations.
Potassium sulfate is not listed as a dangerous waste in Resource Conservation and Recovery Act (RCRA) 40 CFR 261.
14. TRANSPORTATION INFORMATION

US DOT (ground)
- UN-No.
- Non dangerous good
- UN Proper Shipping Name: Not applicable
- Hazard class: Not applicable
- Packing group: Not applicable
- Marine pollutant: No
- Hazard label: Not applicable

International Maritime Organization (IMDG Code)
- UN-No.
- Non dangerous good
- UN Proper Shipping Name: Not applicable
- Hazard class: Not applicable
- Packing group: Not applicable
- Marine pollutant: No
- Hazard label: Not applicable

International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA)
- UN-No.
- Non dangerous good
- UN Proper Shipping Name: Not applicable
- Hazard class: Not applicable
- Packing group: Not applicable
- Hazard label: Not applicable

Special handling procedure
None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Other special precautions
None

15. REGULATORY INFORMATION

US Federal

SARA Title III Rules
- Section 311/312 Hazard Classes
  - Acute Health Hazard: No
  - Chronic Health Hazard: No
  - Fire Hazard: No
  - Release of Pressure: No
  - Reactive Hazard: No

Section 313 Toxic Chemicals
No components listed

Section 302 Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances
No components listed

NFPA 704/2012: National Fire Protection Association
- Health: 1
- Fire: 0
- Instability: 0
- Special: None

US State Regulations
California Proposition 65
No components listed
Canada
Ingredient Disclosure List: No components listed
WHMIS Classification: Not classified
This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

European Union
Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Not classified as hazardous.

16. OTHER INFORMATION
This SDS complies with 29 CFR part 1910 subpart Z (2012), Canada Controlled Products Regulations (2010) and ANSI Standard Z400.1-2004

Prepared by Regulatory Affairs Department, SQM
E-mail product_safety@sqm.com
Last revision date November 2012

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Indication of changes
All sections were reviewed and modified to comply with 29CFR part 1910 subpart Z (2012).