


<b>SAFETY DATA SHEET</b>	
Haifa-SOP	1 of 11

Complying with 1907/2006/EEC Regulation of 18 December 2006 ("REACH Regulation") and REGULATION (EC) No 1272/2008 (CLP)

**Section 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

**1.1 Product identifier**

**Product name:** Potassium sulfate

**Trade names:** Haifa-SOP

**Synonyms:** SOP, Sulfate of potash; Sulfuric acid potassium salt;

**Chemical formula:**  $K_2SO_4$

**Fertilizer formula:** 0-0-51+42.5SO<sub>3</sub>

**Product type:** Inorganic solid

**CAS number:** 7778-80-5

**EC number:** 231-915-5

**REACH registration no(s):** 01-2119489441-34

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

**Use of the substance/preparation:** Agriculture – fertilizer, component of mixed and liquid fertilizers.

**1.3 Details of the supplier of the safety data sheet**

**Company/undertaking identification**

**European Importer:** Haifa Chemicals Northern Europe  
Generaal de Wittelaan 17, bus 16,  
B-2800 Mechelen, Belgium  
Tel: +32-15-270811  
E-mail: [hichem@hichem.be](mailto:hichem@hichem.be)


**Other Countries Importer**

**Supplier/Manufacturer:** Haifa Chemicals Ltd.  
P.O.B 10809, Haifa Bay 26120, Israel  
Tel: +972-4-8469616  
Fax: +972-4-8469953/5

**E-mail address of person responsible for this SDS:** [info@haifachem.com](mailto:info@haifachem.com)

**1.4 Emergency telephone number**

**Emergency telephone number (with hours of operation):** +972-4-8469616  
CHEMTREC (U.S.): 1-800-424-9300

<b>SAFETY DATA SHEET</b>	
Haifa-SOP	2 of 11

## Section 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Classification in accordance to Regulation(EC) No. 1272/2008 (CLP/GHS)

Product name	GHS Classification
Potassium sulfate	Eye.Dam.1; H318

Classification according to Directive 67/548/EEC (DSD) or 1999/45/EC

Product name	EU Classification
Potassium sulfate	Xi; R41

See section 16 for full text of the R phrases or H statements declared above.

See section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

Labeling in accordance with Regulation 1272/2008 (CLP)

Hazard pictograms:



**Signal word:** Danger

**Hazard statements:** Causes serious eye damage.

**Precautionary Statements:**

P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

### 2.3 Other hazard

**Substance meets the criteria for BBT according to Regulation (EC) No. 1907/2006, Annex XIII:**


Not applicable

**Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII:**

Not applicable

**Other hazard which do not result in classification:**

Not applicable

<b>SAFETY DATA SHEET</b>	
Haifa-SOP	3 of 11

### Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance/mixture:**

Product/ Ingredient name	Identifiers	%	EU Classification	GHS Classification
Potassium sulfate	CAS number: 7778-80-5 EC number: 231-915-5 REACH: 01-2119489441-34	>85%	-	-
Potassium hydrogensulphate	CAS number: 7646-93-7 EC number: 231-594-1	0-15%	C; R34 Xi; R37	Skin Corr.1B; H314 STOT SE 3; H335

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in section 8.**

### Section 4. FIRST AID MEASURES

#### **4.1 Description of first aid measures**

**Eyes contact:** In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if irritation occurs.

**Skin contact:** Avoid prolonged or repeated contact with skin. After handling, always wash hands thoroughly with soap and water. Get medical attention if irritation develops.

**Inhalation:** Avoid breathing dust. If inhaled, remove to fresh air.

**Ingestion:** If large quantities of this material are swallowed, call a physician immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

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

##### **Potential acute health effects**

Inhalation: N/A

Ingestion: N/A

Skin contact: N/A


Eyes contact: Irritating to eyes.

##### **Over-exposure sign/symptoms:**

Eyes contact: Irritating to eyes.

Inhalation: No special data

Ingestion: No special data

<b>SAFETY DATA SHEET</b>	
Haifa-SOP	4 of 11

Skin contact: No special data

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

**Notes to physician:** In case of inhalation of decomposition products from a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Special treatments:** No specific treatment

### **Section 5: Fire-Fighting Measures**

#### **5.1 Extinguishing media**

Suitable: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Not suitable: N/A

#### **5.2 Special hazards arising from the substance or mixture**

Non-combustible.

Hazardous thermal decomposition products: Under fire - oxides of sulfur, oxides of potassium.

#### **5.3 Advice for firefighters**

**Special protective equipment for fire fighters:** Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Remark:** Move containers from fire area if possible to do so without risk.

### **Section 6: Accidental Release Measures**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective clothing. Ventilate area of spill.

#### **6.2 Environmental precautions**

Avoid contact of spilled material and runoff with soil and surface waterways.

#### **6.3 Methods and materials for containment and cleaning up**

Small spill: Use a tool to scoop up solid material and place into an appropriate labeled waste container. Do not mix with sawdust or other combustible material. Avoid creating dusty conditions and prevent wind dispersal. Keep out of waterways.

Large spill: As for small spill


**Personal Protection in Case of Large Spill:** Safety glasses. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product.

#### **6.4 Reference to other sections**

See Sections 1 for emergency contact information

See Section 8 for information on appropriate personal protective equipment

See Section 13 for additional waste treatment information

<b>SAFETY DATA SHEET</b>	
Haifa-SOP	5 of 11

## Section 7: Handling and Storage

### **7.1 Precautions for safe handling**

**Handling:** Minimize dust generation and accumulation. Do not breathe dust. Avoid contact with skin and eyes. Wash thoroughly after handling. Do not permit eating/drinking/smoking near the material.

**Hygiene Measures:** Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also section 8 for additional information measures.

### **7.2 Conditions for safe storage, including any incompatibilities**

**Storage:** Keep containers tightly closed, in a dry, cool and well ventilated place.

Protect from extreme humidity.

Do not store together with strong oxidizing agents, strong bases and strong acids.

Keep away from heat, sparks and open flame.

**7.3 Specific end use(s):** N/A

## Section 8: Exposure Control / Personal Protection

### **8.1 Control parameters**

**Occupational exposure limit values:** N/A

**Derived effects levels:**

Recommended occupational and consumer exposure limit values (following from the preformed CSA):

Exposure pattern	Derived No Effect Level (DNEL)	
	Workers	General population
Oral	N/A	12.8 mg/kg bw/day
Dermal	21.3 mg/kg bw/day	12.8 mg/kg bw/day
Inhalation	37.6 mg/m <sup>3</sup>	11.1 mg/m <sup>3</sup>

### **8.2 Exposure controls**

#### **Engineering Measures**


Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommend exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

#### **Person Protective measures**

#### **Occupational exposure controls:**

Respiratory protection: Disposable particulate mask. Be sure to use an approved/certified or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hand protection: Wear protective disposable vinyl gloves to prevent skin exposure.

<b>SAFETY DATA SHEET</b>	
Haifa-SOP	6 of 11

Eye protection: Wear protective safety glasses.

Skin protection: Wear appropriate long-sleeved clothing to minimize skin contact.

Hygiene measures: Keep away from foodstuffs and beverages. Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Clean skin thoroughly after work; apply skin cream. During use, provide suitable ventilation.

**Environmental exposure controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## Section 9: Physical and Chemical Properties

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

**General information:**

Appearance: Solid (crystalline powder), white or colorless

Odour: Odourless

Odour threshold: Odourless

pH: 7 at 25°C, aq. sol.

Melting point/Freezing point:

Initial boiling point/boiling range: 1689°C

Flash point: Not applicable

Evaporation rate: Not applicable (butyl acetate=1)

Flammability: Non flammable

Upper/lower flammability or explosive limits: N/A

Vapor pressure: Not applicable

Vapor density: Not applicable

Relative Density: 2.66 gm/cm<sup>3</sup> (20°C)

Solubility(ies): Water solubility- very soluble, 120 g/l at 25°C, 111 g/l at 20°C

Partition coefficient Octanol/Water: Not applicable

Auto-ignition temperature: Not applicable

Decomposition temperature: N/A

Viscosity: Not applicable

Explosive properties: Non explosive

Oxidizing properties: No oxidizing properties

### **9.2 Other information:**

Molecular weight: 174.26

Miscibility: Not applicable

Fat solubility: Not applicable

Conductivity: Not applicable

Melting point/melting range: 1067°C

Gas group: Not applicable


VOC: Not an organic compound

Apparent (Bulk) Density: 1.1-1.6 g/cm<sup>3</sup>

## Section 10: Stability and Reactivity

### **10.1 Reactivity**

No specific test data related to reactivity available for this product or its ingredients

<b>SAFETY DATA SHEET</b>	
Haifa-SOP	7 of 11

### **10.2 Chemical stability**

The product is stable under normal handling and storage conditions described in Section 7..

### **10.3 Possibility of hazardous reactions**

Under normal conditions of storage and use, hazardous reactions will not occur.

### **10.4 Conditions to avoid**

Extreme humidity, excess heat

### **10.5 Incompatible materials**

Strong oxidizing agents, strong bases, strong acids, moisture. Can react violently with aluminum and magnesium at high temperature.

### **10.6 Hazardous Decomposition products:**

Under fire - oxides of phosphorous, oxides of potassium.

## **Section 11: Toxicological Information**

### **11.1 Information on toxicological effects**

#### **Acute toxicity:**

<b>Product/ingredient name</b>	<b>Test</b>	<b>Species</b>	<b>Dose</b>
Potassium sulfate	LD50, oral	Rat	>2000 mg/kg
	LD50, dermal	Rat	>2000 mg/kg
	LC50, Inhalation	Rat	>1200 mg/m <sup>3</sup> air

#### **Irritation and corrosivity:**

Inhalation: N/A

Ingestion: N/A

Skin contact: N/A

Eyes contact: Irritating to eyes.


**Sensitization:** Not sensitizing.

#### **Chronic toxicity:**

Carcinogenicity: No data available.

Mutagenicity: Negative in an vitro Ames test and in chromosome aberrations tested in CHO cells.

Reproductive toxicity: An OECD 422 study with rats shows no effects at all up to doses of 1500 mg/kg bw/day of potassium sulphate. No effects were found on reproduction parameters, neither embryotoxic or developmental effects were seen.

<b>SAFETY DATA SHEET</b>	
Haifa-SOP	8 of 11

### Other effects

Over exposure signs/symptoms: No data available.

Target organs: No data available.

**Toxicokinetics, metabolism and distribution:** No data available.

## Section 12: Ecological Information

### 12.1 Toxicity

Substance name	Toxicity to fish	Toxicity to crustaceans	Toxicity to algae	Toxicity to other aquatic plants	Other toxicity data (birds, bees, plants etc.)
Potassium sulphate	LC50/96h (fathead minnow) 680 mg/L LC50/96 (bluegill) 3550 mg K <sub>2</sub> SO <sub>4</sub> /L	EC50/48 (daphnia magna) 720 mg/l	EC50/LC50 for freshwater algae: 2700 mg/L	-	Birds, NOEC >1000 mg/l

### Predicted effect concentrations

Product/ Ingredient name	Type	Compartment Detail	Value	Method Detail
Potassium sulphate	PNEC	Fresh water	0.68 mg/L	Assessment Factors
	PNEC	Marine	0.068 mg/L	Assessment Factors

### 12.2 Persistence and Degradability

Not applicable, since inorganic substance.

### 12.3 Bioaccumulative potential

Substance name	LogPow	BCF	Potential
Nitric acid, ammonium calcium salt	-	-	-


### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : N/A

**Mobility:** N/A.

### 12.5 Results of PBT and vPvB assessment



<b>SAFETY DATA SHEET</b>	
Haifa-SOP	9 of 11

Not applicable

### **12.6 Other adverse effects**

Substances which have an unfavorable influence on the oxygen balance and can be measured using parameters such as BOD, COD, etc.: Absent

Substances, which contribute to eutrophication: Absent

## **Section 13: Disposal Considerations**

### **13.1 Waste treatment methods**

**Provisions relating to waste:** Directive 2008/98/EC on waste, of 19 November, 2008: Depending on branch of industry and production process, also other EURAL codes may be applicable  
06 03 14: solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

#### **Product**

**Methods of disposal:** Waste must be disposed of in accordance with federal, state and local environmental control regulations.

**Hazardous waste:** N/A

#### **Packing**

Empty containers should be taken for local recycling, recovery or waste disposal.

## **Section 14: Transport Information**

### **International transport regulations**

<b>Regulatory Information</b>	<b>14.1 UN number</b>	<b>14.2 Proper shipping name</b>	<b>14.3 Classes</b>	<b>14.4 Packing group</b>	<b>14.5 Environmental hazard</b>	<b>14.6 Special precautions for user</b>	<b>Additional information</b>
ADR/RID Class	NOT regulated	-	-	-	-	-	-
ADNR Class	NOT regulated	-	-	-	-	-	-
IMDG class	NOT regulated	-	-	-	-	-	-
IATA class	NOT regulated	-	-	-	-	-	-

### **14.7 Transport to bulk according to Annex II of MARPOL 79/78 and the IBC Code**


Not applicable

## **Section 15: Regulatory Information**

### **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use

EU Regulation(EC) No.1907/2006 (REACH), No 1272/2008 (CLP)

<b>SAFETY DATA SHEET</b>	
Haifa-SOP	10 of 11

### **15.2 Chemical safety assessment**

In accordance with REACH article 14, a Chemical Safety Assessment has been carried out for this substance.

### **Section 16: Other Information**

#### **Full text of R-phrases referred to in sections 2 and 3:**

R41: Risk of serious damage to eyes.  
R34: Causes burns  
R37: Irritating to the respiratory system

#### **Safety phrases:**

S25: Avoid contact with eyes.

#### **Full text of Hazards Statements referred to in sections 2 and 3:**

H318: Causes serious eye damage.  
H314: Causes severe skin burns and eye damage.  
H335: May cause respiratory irritation.

#### **Precautionary Statements:**

P264: Wash thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Training advice:** Before using/handling the product one must read carefully present MSDS.

**Recommended restriction:** N/A

#### Key Legend Information:


ACGIH- American Conference of Governmental Industrial Hygienists  
OSHA- Occupational Safety and Health Administration  
NTP- National Toxicology program  
IARC- International Agency for Research on Cancer  
ND- Not Determined  
N/A- Not available  
R-phrases- Risk phrases  
S-phrases- Safety phrases

Date of issue: 26<sup>th</sup> May 2010

Date of reversion: 19<sup>th</sup> December 2010

Version no. 3

To the best of our knowledge the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the

<p style="text-align: center;"><b>SAFETY DATA SHEET</b></p>	
<p style="text-align: center;">Haifa-SOP</p>	<p style="text-align: center;">11 of 11</p>

user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

