

İkitelli O.S.B.Deparko San.Sit. Hürriyet Bulvarı No:1/46-46/A BAŞAKŞEHİR/ İSTANBUL

Telefon : 90 - 212 - 675 05 39

Fax No : 90 - 212 - 675 08 02

Web site : [www.askimya.com](http://www.askimya.com)

E-mail : [info@askimya.com](mailto:info@askimya.com)

## POTASSIUM SULFATE

### 1. Identification of the substance/preparation and the company

#### 1.1 Identification of the substance or preparation:

Synonyms: dipotassium sulfate, dipotassium sulphate

CAS No. : 7778-80-5

EC index No. : N.A.

EINECS No. : 231-915-5

RTECS No. : TT5900000

NFPA code : 1-0-0(\*)

Molecular weight : 174.26

Formula :  $K_2SO_4$

#### 1.2 Use of the substance or the preparation:

Food industry: additive

Pharmaceutical product: active ingredient

Fertilizer

### 2. Composition/information on ingredients

Hazardous ingredients	CAS No. EINECS/ELINCS No.	Conc. in %	Hazard symbol	Risks (R-phrases)
potassium sulfate	7778-80-5 231-915-5	100	-	-

### 3. Hazards identification

- No hazard classification in accordance with directive 67/548/EEC

### 4. First aid measures

#### 4.1 Eye contact:

- If irritation persists: consult a doctor/medical service
- Rinse with water

#### 4.2 Skin contact:

- If irritation persists: consult a doctor/medical service
- Wash with water and soap

#### 4.3 After inhalation:

- If breathing problems develop: consult a doctor/medical service
- Remove the victim into fresh air
- Unconscious: maintain adequate airway and respiration



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## 4.4 After ingestion:

- If you feel unwell: consult a doctor/medical service
- Immediately after ingestion: give lots of water to drink
- Never give water to an unconscious person
- Victim is fully conscious: induce vomiting

## 5. Fire-fighting measures

### 5.1 Suitable extinguishing media:

- Extinguishing media for surrounding fires: all extinguishing media allowed

### 5.2 Unsuitable extinguishing media:

- No data available

### 5.3 Special exposure hazards:

- No data available

### 5.4 Instructions:

- Dilute toxic gases with water spray

### 5.5 Special protective equipment for firefighters:

- Heat/fire exposure: compressed air/oxygen apparatus
- Heat/fire exposure: gas-tight suit

## 6. Accidental release measures

### 6.1 Personal protection/precautions:

See heading 8.1/8.3/10.3

### 6.2 Environmental precautions:

- Contain released substance, pump over in suitable containers
- Plug the leak, cut off the supply
- Knock down/dilute dust cloud with water spray

### 6.3 Methods of cleaning up:

- Stop dust cloud by covering with sand/earth
- Shovel solid spill into closing drums
- Wash down leftovers with plenty of water

## 7. Handling and storage

### 7.1 Handling:

- Observe normal hygiene standards
- Avoid raising dust

### 7.2 Storage:

- Keep container tightly closed
- Store at room temperature
- Store in a dry area
- Store in a well-ventilated area
- Keep away from: heat sources

Storage temperature : N.D.

Quantity limits : N.D.

Storage life : N.D.

Materials for packaging :

- suitable : wood, glass

- to avoid : aluminium

### 7.3 Specific uses:

- See information supplied by the manufacturer



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## 8. Exposure controls/Personal protection

### 8.1 Exposure limit values:

TLV-TWA	:		mg/m <sup>3</sup>		ppm
TLV-STEL	:		mg/m <sup>3</sup>		ppm
TLV-Ceiling	:		mg/m <sup>3</sup>		ppm
OES-LTEL	:	4 R/10 I	mg/m <sup>3</sup>	-	ppm
OES-STEL	:	-	mg/m <sup>3</sup>	-	ppm
MAK	:	1.5 A/4 E	mg/m <sup>3</sup>		ppm
TRK	:		mg/m <sup>3</sup>		ppm
MAC-TGG 8 h	:	5 R/10 I	mg/m <sup>3</sup>		
MAC-TGG 15 min.	:		mg/m <sup>3</sup>		
MAC-Ceiling	:		mg/m <sup>3</sup>		
VME-8 h	:	5 A/10 T	mg/m <sup>3</sup>	-	ppm
VLE-15 min.	:	-	mg/m <sup>3</sup>	-	ppm
GWBB-8 h	:	3 R/10 I	mg/m <sup>3</sup>	-	ppm
GWK-15 min.	:	-	mg/m <sup>3</sup>	-	ppm
Momentary value	:		mg/m <sup>3</sup>		ppm
EC	:		mg/m <sup>3</sup>		ppm
EC-STEL	:		mg/m <sup>3</sup>		ppm

### Sampling methods:

- Potassium and compounds
- Sulfites, & Sulfates

OSHA ID 121  
NIOSH 6004

### 8.2 Exposure controls:

#### 8.2.1 Occupational exposure controls:

- Measure the concentration in the air regularly
- Work under local exhaust/ventilation

#### 8.2.2 Environmental exposure controls: see heading 13

### 8.3 Personal protection:

#### 8.3.1 respiratory protection:

- In case of dust production: dust mask with filter type P2

#### 8.3.2 hand protection:

- Gloves  
suitable materials: Rubber
- Breakthrough time: N.D.

#### 8.3.3 eye protection:

- Safety glasses
- Dust: protective goggles

#### 8.3.4 skin protection:

- Protective clothing  
suitable materials: Rubber



# POTASSIUM SULFATE

## 9. Physical and chemical properties

### 9.1 General information:

Appearance (at 20°C)	: Crystalline solid Dry chemical powder
Odour	: Odourless
Colour	: White

### 9.2 Important health, safety and environmental information:

pH value	: 2.5/8.5 (1 %)
Boiling point/boiling range	: 1689 °C
Flashpoint	: N.A. °C
Explosion limits	: N.A. Vol% ( °C)
Vapour pressure (at 20°C)	: N.D. hPa
Vapour pressure (at 50°C)	: N.D. hPa
Relative density (at 20°C)	: 2.7
Bulk density	: 1.2 kg/liter
Water solubility (at 20°C)	: 11 g/100 ml
Soluble in	: N.D.
Relative vapour density	: N.D.
Viscosity (at 20°C)	: N.D.
Partition coefficient n-octanol/water	: N.D.
Evaporation rate	
ratio to butyl acetate	: N.D.
ratio to ether	: N.D.

### 9.3 Other information:

Melting point/melting range	: 1067 °C
Auto-ignition point	: N.A. °C
Saturation concentration	: N.D. g/m <sup>3</sup>

## 10. Stability and reactivity

### 10.1 Conditions to avoid/reactivity:

- Stable under normal conditions

### 10.2 Materials to avoid:

- Keep away from: heat sources
- Keep away from: aluminium

### 10.3 Hazardous decomposition products:

- Decomposes on exposure to temperature rise: release of toxic and corrosive gases/vapours (sulphur oxides)
- In molten state: reacts violently with (some) metals



# POTASSIUM SULFATE

## 11. Toxicological information

### 11.1 Acute toxicity:

LD50 oral rat	: 6600	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LC50 inhalation rat	: N.D.	mg/l/4 h
LC50 inhalation rat	: N.D.	ppm/4 h

### 11.2 Chronic toxicity:

EC carc. cat.	: not listed
EC muta. cat.	: not listed
EC repr. cat.	: not listed
Carcinogenicity (TLV)	: not listed
Carcinogenicity (MAC)	: not listed
Carcinogenicity (VME)	: not listed
Carcinogenicity (GWBB)	: not listed
Carcinogenicity (MAK)	: not listed
Mutagenicity (MAK)	: not listed
Teratogenicity (MAK)	: not listed
IARC classification	: not listed

11.3 Routes of exposure: ingestion, inhalation, eye and skin

### 11.4 Acute effects/symptoms:

#### AFTER INHALATION

AFTER INHALATION OF DUST:  
- Coughing

#### AFTER INGESTION

AFTER ABSORPTION OF HIGH QUANTITIES:  
- Gastrointestinal complaints  
- Nausea  
- Diarrhoea  
- Irritation of the gastric/intestinal mucosa  
- Decreased renal function  
- Disturbances of heart rate

#### AFTER SKIN CONTACT

- Slight irritation

#### AFTER EYE CONTACT

ON CONTINUOUS EXPOSURE/CONTACT:  
- Redness of the eye tissue  
- Irritation of the eye tissue

### 11.5 Chronic effects:

- No cumulative effect

ON CONTINUOUS EXPOSURE/CONTACT:

- Skin rash/inflammation  
- Respiratory difficulties



# POTASSIUM SULFATE

## 12. Ecological information

### 12.1 Ecotoxicity:

- LC50 (96 h) : >1000 mg/l
- EC50 (48 h) : 890 mg/l (DAPHNIA MAGNA)
- EC50 (72 h) : 2900 mg/l (SCENEDESMUS SUBSPICATUS)

### 12.2 Mobility:

- Volatile organic compounds (VOC): N.A.
- Soluble in water

For other physicochemical properties see section 9

### 12.3 Persistence and degradability:

- biodegradation BOD<sub>5</sub> : N.A.
- water : N.D.
- soil : N.D.

### 12.4 Bioaccumulative potential:

- log P<sub>ow</sub> : N.D.
- BCF : N.D.
- Not bioaccumulative

### 12.5 Other adverse effects:

- WGK : 1 (classification in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- Effect on the ozone layer : Not dangerous for the ozone layer (Council Regulation (EC) No 3093/94, O.J. L333 of 22/12/94)
- Greenhouse effect : No data available
- Effect on waste water purification : No data available

## 13. Disposal considerations

### 13.1 Provisions relating to waste:

- Waste material code (75/442/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 06 03 14 (solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13)
- Waste material code (Flanders): 213

### 13.2 Disposal methods:

- Recycle/reuse
- Precipitate/make insoluble
- Remove to an authorized dump (Class I)

### 13.3 Packaging:

- Waste material code packaging (75/442/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001):
  - 15 01 03 (wooden packaging)
  - 15 01 07 (glass packaging)



# POTASSIUM SULFATE

## 14. Transport information

- 14.1 Classification of the substance in compliance with UN Recommendations  
UN number : -  
CLASS :  
SUB RISKS :  
PACKING :  
PROPER SHIPPING NAME :
- 14.2 ADR (transport by road)  
CLASS : NOT SUBJECT  
PACKING :  
DANGER LABEL TANKS :  
DANGER LABEL PACKAGES :
- 14.3 RID (transport by rail)  
CLASS : NOT SUBJECT  
PACKING :  
DANGER LABEL TANKS :  
DANGER LABEL PACKAGES :
- 14.4 ADNR (transport by inland waterways)  
CLASS : NOT SUBJECT  
PACKING :  
DANGER LABEL TANKS :  
DANGER LABEL PACKAGES :
- 14.5 IMDG (maritime transport)  
CLASS : NOT SUBJECT  
SUB RISKS :  
PACKING :  
MFAG :  
EMS :  
MARINE POLLUTANT :
- 14.6 ICAO (air transport)  
CLASS : NOT SUBJECT  
SUB RISKS :  
PACKING :  
PACKING INSTRUCTIONS PASSENGER AIRCRAFT :  
PACKING INSTRUCTIONS CARGO AIRCRAFT :
- 14.7 Special precautions in connection with transport : Not restricted for any mode of international transport



# POTASSIUM SULFATE

## 15. Regulatory information

Labelling in accordance with directive 67/548/EEC

Not applicable

## 16. Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. = NOT APPLICABLE  
N.D. = NOT DETERMINED  
\* = INTERNAL CLASSIFICATION

### Exposure limits:

TLV : Threshold Limit Value - ACGIH USA 2002  
OES : Occupational Exposure Standards - United Kingdom 2001  
MEL : Maximum Exposure Limits - United Kingdom 2001  
MAK : Maximale Arbeitsplatzkonzentrationen - Germany 2001  
TRK : Technische Richtkonzentrationen - Germany 2001  
MAC : Maximale aanvaarde concentratie - The Netherlands 2002  
VME : Valeurs limites de Moyenne d'Exposition - France 1999  
VLE : Valeurs Limites d'Exposition à court terme - France 1999  
GWBB: Grenswaarde beroepsmatige blootstelling - Belgium 2002  
GWK : Grenswaarde kortstondige blootstelling - Belgium 2002  
EC : Indicative occupational exposure limit values - Directive 2000/39/EC

I : Inhalable fraction = T : Total dust = E : Einatembarer Aerosolanteil  
R : Respirable fraction = A : Alveolengängiger Aerosolanteil/Alveolar dust  
C : Ceiling limit

a:	aerosol	r:	rook/Rauch	(fume)
d:	damp (vapour)	st:	stof/Staub	(dust)
du:	dust	ve:	vezel	(fibre)
fa:	Faser (fibre)	va:	vapour	
fi:	fibre	om:	oil mist	
fu:	fume	on:	olienevel/Ölnebel	(oil mist)
p:	poussière (dust)	part:	particles	

### Chronic toxicity:

K : List of the carcinogenic substances and processes - The Netherlands 2002