



1. Identification of the substance/preparation

Name of product	Patentkali® 'granular' Patentkali® 'fine' Patentkali® 'Gazon' Patentkali® 'gran' micro
Manufacturer/distributor	K+S KALI GmbH Bertha-von-Suttner-Str. 7, D-34111 Kassel P.O. Box 10 20 29, D-34111 Kassel Phone (+49) 561 9301-0 Fax (+49) 561 9301-1753
Advice	Environment, Safety and Quality Management Phone (+49) 561 9301-1604 Fax (+49) 561 9385-45095
Emergency advice	Environment, Safety and Quality Management Phone (+49) 561 9301-16 04
Recommended intended purpose	Fertilizer

2. Composition/Information on Ingredients

CAS-Nr.	EC-Nr. (EINECS/ELINCS)	Name	Amount	Classification, R-, S-phrases
7778-80-5	231-211-8	Potassium Sulphate	> 50%	-
14168-73-1	213-298-2	Magnesium Sulphate Monohydrate	> 30%	-

Additional advice

May contain anti-dusting additives in very small quantities.
Designation according to EC Fertilizer-Directive 76/116/EEC and supplementary directives:
Sulphate of Potash containing Magnesium Salt, with S 30/10

3. Special hazards information for man and environment

R-phrases

Not applicable

Special hazards information for man and environment

Not classified as a dangerous product according to the EC-directive in the latest version

4. First aid measures

General information

Consult physician with continuous complaints.

In case of inhalation

In case of inhalation ensure fresh air.

In case of skin contact

In case of skin contact rinse off with water.

In case of eye contact

In case of eye contact rinse thoroughly with water.

After swallowing

Rinse mouth with water and drink plenty of water.

5. Fire-fighting measures

Suitable extinguishing material

The product is not combustible.

Extinguishing material that may not be used for safety reasons

None

Special exposure hazards arising from the substance, combustion products or resulting gases

In the event of fire: Sulphur oxides (SOx) can be set free.

Special protective equipment for fire-fighters

In the event of fire and/or explosion do not breathe fumes.

Additional information

Collect contaminated fire fighting water separately, may not be discharged into the drains



6. Measures during unintentional release

Personal precautionary measures

Avoid dust formation

Environmental precautions

Do not discharge into the drains or bodies of waters

Methods for cleaning / picking up

Avoid dust formation

Disposal according to regulations

Flush away residues with water

Pick up mechanically and send for disposal

Additional Information

Information for safe handling look up Chapter 7.

Information for personal protective equipment look up Chapter 8.

Information for disposal look up Chapter 13.

7. Handling and Storage

Advice on safe handling

No special measures necessary if used correctly.

Take the usual precautions when handling chemicals.

Advice on protection against fire and explosion

The product is not combustible.

No special measures necessary.

Requirements for storage rooms and vessels

No special measures necessary.

Advice on storage compatibility

Do not store together with strong acids

Do not store together with oxidizing agents.

Further Information on storage conditions

Store in a dry place.

Storage Group 13 (German VCI-classification)

Information on storage stability

Unlimited stability.

8. Exposure controls / personal protection

Additional advice on system design

None

Additional advice

None

Respiratory protection

In case of dust formation wear micro dust mask.

Hand protection

Not required.

Eye protection

In case of dust formation wear goggles.

Skin protection

Not required

General protective measures

None

Hygiene measures

Do not eat or drink during work.

Brush soiled clothing.

After work wash thoroughly.

9. Physical and chemical properties

Form	Colour	Odour				
Granular	Whitish	Odourless				
Data relevant for safety	Value	Temperature	At	Method	Remark	
pH-value in delivery state	7	20 °C	180 g/l	DIN 38404-5	neutral	
Melting point	> 1060 °C					
Flash point	Not applicable					
Flammable solid	no					
Bulk density	1100-1400 kg/m ³					
Solubility in water	approx. 180 g/l	20 °C	1013 hPa			
Combustion value	1					



Oxidizing properties

None

Explosive properties

None

Additional information

Physical data refer to main component (K₂SO₄).

10. Stability and reactivity

Conditions to avoid

Corrosive to metals

Materials to avoid

Reactions with strong acids.

Reactions with oxidizing agents.

Hazardous decomposition products

Sulphur oxides (SO_x)

Thermal decomposition

> 700 °C

11. Toxicological information

Acute toxicity / irritability / sensitization

	Value/Validation	Species	Method	Remark
LD50 acute oral	6600 mg/kg	rat		K ₂ SO ₄ Ref. (1)
LD50 acute dermal	Not determined			
LC50 acute inhalation	Not determined			
Irritability skin	no			Experiences.
Irritability eye	no			Experiences.
sensitization skin	no			Experiences.
sensitization respiratory system	no			Experiences.

Toxicological test (Additional information)

No experimental indication of genotoxic effects.

Substance has no mutagen activity (Ames-Test).

Additional information

Toxicological data refer to the main component (K₂SO₄).

Our data are not sufficient for total texture judgement.

Follow the usual hygiene directives for handling with chemicals.

12. Ecological information

Data on elimination (persistence and degradability)

	Elimination rate	Method of analysis	Method	Remark
Physicochemical degradability	not applicable			
Biological degradability	not applicable			
Degradability	inorganic product, cannot be eliminated from water by biological purification process			
Biological eliminability	not applicable			
	inorganic product, cannot be eliminated from water by biological purification process			

Eco-toxicological effects

	Value	Species	Method	Remark
Fish	LC50 1692-2380 mg/l (96 h)	Alburnus alburnus	DIN 38412 part 31	Ref. (2)
Daphnia	EC50 890 mg/l (48 h)	Daphnia magna	DIN 38412 part 11	Ref. (2)
Algae	EC50 2900 mg/l (72 h)	Scenedesmus subspicatus	DIN 38412 part 33	Ref. (2)
Bacteria	EC20 >20 g/l (16 h)	Pseudomonas putida	DIN 38412 part 8	Ref. (2)

Behaviour in sewage plant

When low concentrations are discharged correctly into adapted biological sewage treatment plants, interference with the degradation activity of activated sludge is not likely.

Additional ecological information

	Value	Method	Remark
AOX			not applicable

General information

Product is not allowed to discharge into aquatic environment.

Ecological data refer to the main component (K₂SO₄).



13. Disposal considerations

Waste code no.

02 01 09

Name of waste

Agrochemical waste other than those mentioned in 02 01 08

Recommendations for the product

In accordance with regulations for special waste, discharge of after pre-treatment, to an authorized special waste disposal site.

The product is used as fertilizer. Before landfill the agricultural utilization should be examined.

Recommendations for the packaging

Untaminated packaging may be taken for recycling.

Contaminated packaging should be emptied as far as possible and discharged like product.

Recommended cleansing agent

No

14. Transport information

Road/Rail – ADR/RID

No hazardous material as defined by the regulations.

Sea - IMDG

No hazardous material as defined by the regulations.

Air IATA/ICAO

No hazardous material as defined by the regulations.

15. Regulatory information

Remarks for classification

No

R-phrases

No

S-phrases

No

National regulations

Decree for case of interference not applicable

Water hazard classification 1 KBwS classification

16. Other Information

Training advice

no

Recommended uses and restrictions

no

Further Information

The information given is based on our present knowledge and is not meant to guarantee product properties. Recipients of our product must take responsibility for observing existing laws and regulations.

Refer to product information.

Sources of key data used

Ref. (1): GISAAA 50(7), 24, 1985

Ref. (2): Data sheet No. 255, Kommission Bewertung wassergefährlicher Stoffe, Bundesgesundheitsamt, P.O. box 330013, 14191 Berlin, Germany, 1992