acc. to Regulation (EC) No. 1907/2006 (REACH)

## Potassium hydrogen sulphate ≥99 %, p.a.

article number: P020 date of compilation: 2015-09-03 Version: 4.0 en Revision: 2024-03-02

Replaces version of: 2022-05-24

Version: (3)



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

#### **Product identifier** 1.1

Identification of the substance **Potassium hydrogen sulphate** ≥99 %, p.a.

Article number P020

Index No (GB CLP) 016-056-00-4 EC number 231-594-1 CAS number 7646-93-7

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

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for squirting or spraying. Do not use

> for products which come into direct contact with the skin. Do not use for private purposes (household). Food, drink and animal feedingstuffs.

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

Carl Roth GmbH + Co. KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 Telefax: +49 (0) 721 - 56 06 149 e-mail: sicherheit@carlroth.de Website: www.carlroth.de

Competent person responsible for the safety data Department Health, Safety and Environment

sheet:

e-mail (competent person): sicherheit@carlroth.de

#### **Emergency telephone number** 1.4

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

# **SECTION 2: Hazards identification**

#### Classification of the substance or mixture 2.1

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#### Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.2	Skin corrosion/irritation	1B	Skin Corr. 1B	H314
3.8R	Specific target organ toxicity - single exposure (respirat- ory tract irritation)	3	STOT SE 3	H335

For full text of abbreviations: see SECTION 16

# The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis.

## 2.2 Label elements

# Labelling

Signal word Danger

## **Pictograms**

GHS05, GHS07



# **Hazard statements**

H314 Causes severe skin burns and eye damage

H335 May cause respiratory irritation

#### **Precautionary statements**

# **Precautionary statements - prevention**

P280 Wear protective gloves/protective clothing/eye protection/face protection

# **Precautionary statements - response**

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin

with water [or shower]

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing

P312 Call a POISON CENTRE/doctor if you feel unwell

## 2.3 Other hazards

# Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## **Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

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# **SECTION 3: Composition/information on ingredients**

#### 3.1 Substances

CAS No

Name of substance Potassium hydrogen sulphate

7646-93-7

Molecular formula HKSO<sub>4</sub>

Molar mass 136,2 <sup>g</sup>/<sub>mol</sub>

EC No 231-594-1

Index No (GB CLP) 016-056-00-4

# **SECTION 4: First aid measures**

# 4.1 Description of first aid measures



#### **General notes**

Take off immediately all contaminated clothing. Self-protection of the first aider.

#### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

#### **Following skin contact**

After contact with skin, wash immediately with plenty of water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

#### Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

## Following ingestion

Rinse mouth immediately and drink plenty of water. Call a physician immediately. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

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

Corrosion, Risk of blindness, Gastric perforation, Irritation, Cough, Dyspnoea

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

none

# **SECTION 5: Firefighting measures**

## 5.1 Extinguishing media



## Suitable extinguishing media

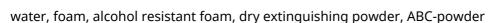
co-ordinate firefighting measures to the fire surroundings!

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## Unsuitable extinguishing media

water jet

## 5.2 Special hazards arising from the substance or mixture

Non-combustible.

#### **Hazardous combustion products**

In case of fire may be liberated: Sulphur oxides (SOx)

## 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

# **SECTION 6: Accidental release measures**

## 6.1 Personal precautions, protective equipment and emergency procedures



## For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

#### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised.

#### 6.3 Methods and material for containment and cleaning up

## Advice on how to contain a spill

Covering of drains. Take up mechanically.

#### Advice on how to clean up a spill

Take up mechanically. Control of dust.

## Other information relating to spills and releases

Place in appropriate containers for disposal.

#### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

# **SECTION 7: Handling and storage**

# 7.1 Precautions for safe handling

Handle and open container with care. Provision of sufficient ventilation. Avoid dust formation. Clear contaminated areas thoroughly.

#### Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

# Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

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

Store in a dry place. Keep container tightly closed. Hygroscopic solid.

## **Incompatible substances or mixtures**

Observe hints for combined storage.

# Protect against external exposure, such as

humidity

#### **Consideration of other advice:**

#### **Ventilation requirements**

Use local and general ventilation.

## Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

#### 7.3 Specific end use(s)

No information available.

# **SECTION 8: Exposure controls/personal protection**

#### **Control parameters** 8.1

## **National limit values**

# **Occupational exposure limit values (Workplace Exposure Limits)**

Coun try	Name of agent	CAS No	Identifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
GB	dust		WEL	10			i	EH40/2005
GB	dust		WEL	4			r	EH40/2005

## Notation

Ceiling value is a limit value above which exposure should not occur Inhalable fraction Ceiling-C

Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-

minute period (unless otherwise specified)

Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified) TWA

#### 8.2 **Exposure controls**

# Individual protection measures (personal protective equipment)

# **Eye/face protection**





Use safety goggle with side protection. Wear face protection.

## Skin protection



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# hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a quide.

## type of material

NBR (Nitrile rubber)

#### material thickness

>0,3 mm

## breakthrough times of the glove material

>480 minutes (permeation: level 6)

#### other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

## **Respiratory protection**





Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

#### **Environmental exposure controls**

Keep away from drains, surface and ground water.

# **SECTION 9: Physical and chemical properties**

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

Physical state solid
Colour white

Odour odourless

Melting point/freezing point 197 °C (slow decomposition) (ECHA)

Boiling point or initial boiling point and boiling

range

not determined

Flammability non-combustible
Lower and upper explosion limit not determined
Flash point not applicable
Auto-ignition temperature not determined

Decomposition temperature >195 °C

pH (value) 1 (in aqueous solution: 50 <sup>g</sup>/<sub>l</sub>, 20 °C)

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Kinematic viscosity not relevant

Solubility(ies)

Water solubility 506 g/l at 25 °C (ECHA)

Partition coefficient

Partition coefficient n-octanol/water (log value): not relevant (inorganic)

Vapour pressure not determined

Density and/or relative density

Density  $2,32 \, {}^{g}/_{cm^3}$  at 20 °C (ECHA)

Relative vapour density Information on this property is not available.

Bulk density  $\sim 1.140 \, ^{\mathrm{kg}} /_{\mathrm{m}^3}$ 

Particle characteristics No data available.

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics: There is no additional information.

# **SECTION 10: Stability and reactivity**

# 10.1 Reactivity

This material is not reactive under normal ambient conditions.

## 10.2 Chemical stability

Hygroscopic solid.

## 10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser, Strong alkali, Alcohols,

Risk of ignition: Metals,

**Exothermic reaction with:** Water

# 10.4 Conditions to avoid

Keep away from heat. Decompostion takes place from temperatures above: >195 °C.

# 10.5 Incompatible materials

The product develops hydrogen in an aqueous solution in contact with metals

#### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

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# **SECTION 11: Toxicological information**

# 11.1 Information on toxicological effects

#### Classification acc. to GHS

## **Acute toxicity**

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4. May be harmful if swallowed.

# **Acute toxicity**

Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	>2.000 <sup>mg</sup> / <sub>kg</sub>	rat		ECHA

#### Skin corrosion/irritation

Causes severe skin burns and eye damage.

## Serious eye damage/eye irritation

Causes serious eye damage.

## Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

## **Germ cell mutagenicity**

Shall not be classified as germ cell mutagenic.

#### Carcinogenicity

Shall not be classified as carcinogenic.

## **Reproductive toxicity**

Shall not be classified as a reproductive toxicant.

## Specific target organ toxicity - single exposure

May cause respiratory irritation.

# Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

#### **Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

# Symptoms related to the physical, chemical and toxicological characteristics

## • If swallowed

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects)

#### If in eyes

causes burns, Causes serious eye damage, risk of blindness

#### • If inhaled

Irritation to respiratory tract, cough, Dyspnoea

#### • If on skin

causes severe burns, causes poorly healing wounds

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Other information

none

## 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

#### 11.3 Information on other hazards

There is no additional information.

# **SECTION 12: Ecological information**

## 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

## 12.2 Persistence and degradability

Data are not available.

#### 12.3 Bioaccumulative potential

Data are not available.

## 12.4 Mobility in soil

Data are not available.

#### 12.5 Results of PBT and vPvB assessment

Data are not available.

## 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

#### 12.7 Other adverse effects

Data are not available.

# **SECTION 13: Disposal considerations**

## 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains.

## Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

#### 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

## Properties of waste which render it hazardous

**HP 5** specific target organ toxicity (STOT)/aspiration toxicity

**HP8** corrosive

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#### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

# **SECTION 14: Transport information**

#### 14.1 UN number or ID number

ADRRID UN 2509
IMDG-Code UN 2509
ICAO-TI UN 2509

14.2 UN proper shipping name

ADRRID POTASSIUM HYDROGEN SULPHATE IMDG-Code POTASSIUM HYDROGEN SULPHATE

ICAO-TI Potassium hydrogen sulphate

14.3 Transport hazard class(es)

ADRRID 8
IMDG-Code 8
ICAO-TI 8

14.4 Packing group

ADRRID II
IMDG-Code II
ICAO-TI II

**14.5 Environmental hazards** non-environmentally hazardous acc. to the dan-

gerous goods regulations

## 14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

## 14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

# 14.8 Information for each of the UN Model Regulations

# Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)Additional information

Proper shipping name POTASSIUM HYDROGEN SULPHATE

Particulars in the transport document UN2509, POTASSIUM HYDROGEN SULPHATE, 8,

II, (E)

Classification code C2
Danger label(s) 8



Excepted quantities (EQ) E2

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Limited quantities (LQ) 1 kg

Transport category (TC) 2

Tunnel restriction code (TRC) E

Hazard identification No 80

Emergency Action Code 2X

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional

information

Classification code C2

Danger label(s) 8

Excepted quantities (EQ) E2
Limited quantities (LQ) 1 kg
Transport category (TC) 2
Hazard identification No 80

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name POTASSIUM HYDROGEN SULPHATE

Particulars in the shipper's declaration UN2509, POTASSIUM HYDROGEN SULPHATE, 8, II

Marine pollutant Danger label(s) 8



Excepted quantities (EQ) E2
Limited quantities (LQ) 1 kg
EmS F-A, S-B
Stowage category A

Segregation group 1 - Acids

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name Potassium hydrogen sulphate

Particulars in the shipper's declaration UN2509, Potassium hydrogen sulphate, 8, II

Danger label(s) 8



Excepted quantities (EQ) E2
Limited quantities (LQ) 5 kg

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# **SECTION 15: Regulatory information**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)

#### **Seveso Directive**

2012/	2012/18/EU (Seveso III)					
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes			
	not assigned					

#### **Deco-Paint Directive**

VOC content	0 %
VOC content	0 <sup>g</sup> / <sub>l</sub>

#### **Industrial Emissions Directive (IED)**

VOC content	0 %
VOC content	0 <sup>g</sup> / <sub>I</sub>

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

# **Water Framework Directive (WFD)**

List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Potassium hydrogen sulphate	Metals and their compounds		a)	

#### Legend

a) Indicative list of the main pollutants

# Regulation on the marketing and use of explosives precursors

not listed

# **Regulation on drug precursors**

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

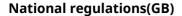
not listed

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List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

Restrictions according to GB REACH, Annex 17

not listed

#### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

#### **National inventories**

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
JP	ISHA-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed (ACTIVE)
VN	NCI	substance is listed

Legend

AIIC CSCL-ENCS Australian Inventory of Industrial Chemicals List of Existing and New Chemical Substances (CSCL-ENCS) Domestic Substances List (DSL)

DSL ECSI

Inventory of Existing Chemical Substances Produced or Imported in China National Inventory of Chemical Substances **IECSC** 

**INSQ** ISHA-ENCS Inventory of Existing and New Chemical Substances (ISHA-ENCS)

KECI Korea Existing Chemicals Inventory
NCI National Chemical Inventory
NZIOC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances

TCSI TSCA Taiwan Chemical Substance Inventory

**Toxic Substance Control Act** 

## 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

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# **SECTION 16: Other information**

# Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
15.1	VOC content: 0 % 0 <sup>g</sup> / <sub>l</sub>	VOC content: 0 %	yes
15.1		VOC content: 0 <sup>g</sup> / <sub>l</sub>	yes
15.1		National inventories: change in the listing (table)	yes

# **Abbreviations and acronyms**

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-li- cence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GB CLP	The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended)
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code

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Abbr.	Descriptions of used abbreviations
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

# Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

# List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.

#### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

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