

GHM Messtechnik GmbH Standort Greisinger

93128 Regenstauf

Date printed 24.10.2018, Revision 23.10.2018

Version 01

Page 1 / 9

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

## 1.1 Product identifier

KOH

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

## 1.2.1 Relevant uses

Electrolyte

## 1.2.2 Uses advised against

None known.

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

## Company

GHM Messtechnik GmbH Standort Greisinger  
 Hans-Sachs-Strasse 26  
 93128 Regenstauf / GERMANY  
 Phone +49( 0)9402 9383-0  
 Fax +49(0)9402 9383-33  
 Homepage www.greisinger.de  
 E-mail info@greisinger.de

## Address enquiries to

## Technical information

info@greisinger.de

## Safety Data Sheet

sdb@chemiebuero.de

## 1.4 Emergency telephone number

## Advisory body

+49 (0)89-19240 (24h) (English)

**SECTION 2: Hazards identification**

## 2.1 Classification of the substance or mixture [REGULATION (EC) No 1272/2008]

Skin Corr. 1A: H314 Causes severe skin burns and eye damage.  
 Met. Corr. 1: H290 May be corrosive to metals.

## 2.2 Label elements

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

## Hazard pictograms



## Signal word

DANGER

## Contains:

Potassium hydroxide

## Hazard statements

H314 Causes severe skin burns and eye damage.  
 H290 May be corrosive to metals.

## Precautionary statements

P101 If medical advice is needed, have product container or label at hand.  
 P102 Keep out of reach of children.  
 P103 Read label before use.  
 P280 Wear protective gloves / protective clothing / eye protection / face protection.  
 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.  
 P310 Immediately call a POISON CENTER / doctor.  
 P390 Absorb spillage to prevent material damage.  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/national regulation.

## 2.3 Other hazards

## Environmental hazards

Does not contain any PBT or vPvB substances.

## Other hazards

Further hazards were not determined with the current level of knowledge.

**GHM Messtechnik GmbH Standort Greisinger**  
**93128 Regenstauf**

Date printed 24.10.2018, Revision 23.10.2018

Version 01

Page 2 / 9

### SECTION 3: Composition / Information on ingredients

**Product-type:**

The product is a mixture.

Range [%]	Substance
6 -7	Potassium hydroxide
	CAS: 1310-58-3, EINECS/ELINCS: 215-181-3, EU-INDEX: 019-002-00-8, Reg-No.: 01-2119487136-33-XXXX
	GHS/CLP: Met. Corr. 1: H290 - Skin Corr. 1A: H314 - Acute Tox. 4: H302

**Comment on component parts**

Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.  
For full text of H-statements: see SECTION 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

**General information**

Change soaked clothing immediately.

**Inhalation**

Ensure supply of fresh air.  
In the event of symptoms seek medical treatment.

**Skin contact**

In case of contact with skin wash off immediately with water.  
In the event of symptoms seek medical treatment.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Seek medical advice immediately.

**Ingestion**

Rinse out mouth and give plenty of water to drink.  
Consult a doctor immediately.

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

No information available.

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

Treat symptomatically.  
Forward this sheet to the doctor.

### SECTION 5: Fire-fighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing media**

Product itself is non-combustible. Fire extinguishing method of surrounding areas must be considered.

**Extinguishing media that must not be used**

Full water jet

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

Risk of formation of toxic pyrolysis products.

#### 5.3 Advice for firefighters

Use self-contained breathing apparatus.  
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

### SECTION 6: Accidental release measures

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

Use personal protective equipment (protective gloves, safety glasses, protective clothing).  
Minor risk of slipping due to leakage/spillage of product in wet area.

#### 6.2 Environmental precautions

Do not discharge into the soil/streches of water.

**GHM Messtechnik GmbH Standort Greisinger**
**93128 Regenstauf**

Date printed 24.10.2018, Revision 23.10.2018

Version 01

Page 3 / 9

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

Take up with absorbent material (e.g. general-purpose binder).  
 Dispose of absorbed material in accordance within the regulations.

**6.4 Reference to other sections**

See SECTION 8+13

**SECTION 7: Handling and storage**
**7.1 Precautions for safe handling**

Avoid contact with eyes and skin. Use personal protective equipment.

Wash face and/or hands before break and end of work.  
 Use barrier skin cream.  
 Do not eat, drink or smoke when using this product.  
 Take off contaminated clothing and wash before reuse.

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

Keep only in original tightly closed container.  
 Prevent penetration into the ground.  
 Provide alkali-resistant floor.  
 Do not store together with food and animal food/diet.  
 Do not store together with acids.  
 Keep container in a well-ventilated place.

**7.3 Specific end use(s)**

See product use, SECTION 1.2

**SECTION 8: Exposure controls / personal protection**
**8.1 Control parameters**
**Ingredients with occupational exposure limits to be monitored (GB)**

Substance
Potassium hydroxide
CAS: 1310-58-3, EINECS/ELINCS: 215-181-3, EU-INDEX: 019-002-00-8, Reg-No.: 01-2119487136-33-XXXX
Short-term exposure (15-minute): 2 mg/m <sup>3</sup>

**DNEL**

Substance
Potassium hydroxide, CAS: 1310-58-3
Industrial, inhalative, Long-term - local effects: 1 mg/m <sup>3</sup> .
general population, inhalative, Long-term - local effects: 1 mg/m <sup>3</sup> .

**PNEC**

Substance
Potassium hydroxide, CAS: 1310-58-3
There are no PNEC values established for the substance.,

**GHM Messtechnik GmbH Standort Greisinger  
 93128 Regenstauf**

Date printed 24.10.2018, Revision 23.10.2018

Version 01

Page 4 / 9

**8.2 Exposure controls**

<b>Additional advice on system design</b>	Using suitable discharges or exhaust ventilation. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
<b>Eye protection</b>	Tightly fitting goggles (EN 166:2001).
<b>Hand protection</b>	The details concerned are recommendations. Please contact the glove supplier for further information. 0,7 mm; Butyl rubber, >480 min (EN 374-1/-2/-3).
<b>Skin protection</b>	Alkaline-resistant protective and long-sleeved work clothing.
<b>Other</b>	Avoid contact with eyes and skin.
<b>Respiratory protection</b>	Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, combination filter A-P1. (DIN EN 14387)
<b>Thermal hazards</b>	none
<b>Delimitation and monitoring of the environmental exposition</b>	Protect the environment by applying appropriate control measures to prevent or limit emissions.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

<b>Form</b>	liquid
<b>Color</b>	yellow-brown
<b>Odor</b>	pungent
<b>Odour threshold</b>	not determined
<b>pH-value</b>	< 2
<b>pH-value [1%]</b>	not determined
<b>Boiling point [°C]</b>	not determined
<b>Flash point [°C]</b>	not applicable
<b>Flammability (solid, gas) [°C]</b>	not applicable
<b>Lower explosion limit</b>	not applicable
<b>Upper explosion limit</b>	not applicable
<b>Oxidising properties</b>	no
<b>Vapour pressure/gas pressure [kPa]</b>	not determined
<b>Density [g/ml]</b>	not determined
<b>Bulk density [kg/m³]</b>	not applicable
<b>Solubility in water</b>	completely miscible
<b>Partition coefficient [n-octanol/water]</b>	not determined
<b>Viscosity</b>	not determined
<b>Relative vapour density determined in air</b>	not determined
<b>Evaporation speed</b>	not determined
<b>Melting point [°C]</b>	not determined
<b>Autoignition temperature [°C]</b>	not determined
<b>Decomposition temperature [°C]</b>	not determined

**9.2 Other information**

none

**SECTION 10: Stability and reactivity****10.1 Reactivity**

Aqueous solutions will react with aluminium, generating hydrogen gas.

**GHM Messtechnik GmbH Standort Greisinger**  
**93128 Regenstauf**

Date printed 24.10.2018, Revision 23.10.2018

Version 01

Page 5 / 9

## 10.2 Chemical stability

Stable under recommended storage conditions.

## 10.3 Possibility of hazardous reactions

Reactions with various metals.

## 10.4 Conditions to avoid

Strong heating.

## 10.5 Incompatible materials

Various metals.

## 10.6 Hazardous decomposition products

No hazardous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product
ATE-mix, inhalative, Based on the available information, the classification criteria are not fulfilled.:
ATE-mix, dermal, Based on the available information, the classification criteria are not fulfilled.:
ATE-mix, oral, > 2000 mg/kg.
Substance
Potassium hydroxide, CAS: 1310-58-3
LD50, oral, Rat: > 214 -< 333 mg/kg.

<b>Serious eye damage/irritation</b>	Risk of serious damage to eyes. Based on the available information, the classification criteria are fulfilled. Calculation method
<b>Skin corrosion/irritation</b>	Product is caustic. Based on the available information, the classification criteria are fulfilled. Calculation method
<b>Respiratory or skin sensitisation</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Specific target organ toxicity — single exposure</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Specific target organ toxicity — repeated exposure</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Mutagenicity</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Reproduction toxicity</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Carcinogenicity</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Aspiration hazard</b>	Based on the available information, the classification criteria are not fulfilled.
<b>General remarks</b>	

Toxicological data of complete product are not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

Substance
Potassium hydroxide, CAS: 1310-58-3
LC50, (24h), Poecilia reticulata: 165 mg/l.
LC50, (24h), Gambusia affinis: 80 mg/l.
EC50, (48h), Ceriodaphnia spec.: 40,4 mg/l.

**GHM Messtechnik GmbH Standort Greisinger  
93128 Regenstauf**

Date printed 24.10.2018, Revision 23.10.2018

Version 01

Page 6 / 9

## 12.2 Persistence and degradability

<b>Behaviour in environment compartments</b>	No information available.
<b>Behaviour in sewage plant</b>	The product is an alkaline solution. Neutralization is normally necessary before a waste water is discharged into sewage treatment plants.
<b>Biological degradability</b>	No information available.

## 12.3 Bioaccumulative potential

No information available.

## 12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

## 12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

## 12.6 Other adverse effects

Do not discharge product unmonitored into the environment or into the drainage.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste material c It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

<b>Product</b>	Dispose of as hazardous waste.
<b>Waste no. (recommended)</b>	060204*
<b>Contaminated packaging</b>	Contaminated packing should be disposed of as product waste.
<b>Waste no. (recommended)</b>	150110* 150102

## SECTION 14: Transport information

### 14.1 UN number

<b>Transport by land according to ADR/RID</b>	1814
<b>Inland navigation (ADN)</b>	1814
<b>Marine transport in accordance with IMDG</b>	1814
<b>Air transport in accordance with IATA</b>	1814

**GHM Messtechnik GmbH Standort Greisinger**
**93128 Regenstauf**

Date printed 24.10.2018, Revision 23.10.2018


Version 01

Page 7 / 9

**14.2 UN proper shipping name**

Transport by land according to ADR/RID Potassium hydroxide solution

- Classification Code C5

- Label 

- ADR LQ 1 I

- ADR 1.1.3.6 (8.6) Transport category (tunnel restriction code) 2 (E)


Inland navigation (ADN) Potassium hydroxide solution

- Classification Code C5

- Label 


Marine transport in accordance with IMDG Potassium hydroxide, solution

- EMS F-A, S-B

- Label 

- IMDG LQ 1 I

Air transport in accordance with IATA Potassium hydroxide solution

- Label 

**14.3 Transport hazard class(es)**

Transport by land according to ADR/RID 8

Inland navigation (ADN) 8

Marine transport in accordance with IMDG 8

Air transport in accordance with IATA 8

**14.4 Packing group**

Transport by land according to ADR/RID II

Inland navigation (ADN) II

Marine transport in accordance with IMDG II

Air transport in accordance with IATA II

**GHM Messtechnik GmbH Standort Greisinger**  
**93128 Regenstauf**

Date printed 24.10.2018, Revision 23.10.2018

Version 01

Page 8 / 9

#### 14.5 Environmental hazards

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

Air transport in accordance with IATA no

#### 14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

#### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

### SECTION 15: Regulatory information

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

**EEC-REGULATIONS** 1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2016/2037/EC); (EU) 2015/830; (EU) 2016/131; (EU) 517/2014

**TRANSPORT-REGULATIONS** DOT-Classification, ADR (2017); IMDG-Code (2017, 38. Amdt.); IATA-DGR (2018).

**NATIONAL REGULATIONS (GB):** EH40/2005 Workplace exposure limits (Second edition, published December 2011).

- **Observe employment restrictions for people** Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.

- **VOC (2010/75/CE)** not applicable

#### 15.2 Chemical safety assessment

For this product a chemical safety assessment has not been carried out.

### SECTION 16: Other information

#### 16.1 Hazard statements (SECTION 03)

H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H290 May be corrosive to metals.



GHM Messtechnik GmbH Standort Greisinger

93128 Regenstauf

Date printed 24.10.2018, Revision 23.10.2018

Version 01

Page 9 / 9

**16.2 Abbreviations and acronyms:**

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route  
 RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses  
 ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure  
 ATE = acute toxicity estimate  
 CAS = Chemical Abstracts Service  
 CLP = Classification, Labelling and Packaging  
 DMEL = Derived Minimum Effect Level  
 DNEL = Derived No Effect Level  
 EC50 = Median effective concentration  
 ECB = European Chemicals Bureau  
 EEC = European Economic Community  
 EINECS = European Inventory of Existing Commercial Chemical Substances  
 ELINCS = European List of Notified Chemical Substances  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
 IC50 = Inhibition concentration, 50%  
 IMDG = International Maritime Code for Dangerous Goods  
 IUCLID = International Uniform Chemical Information Database  
 LC50 = Lethal concentration, 50%  
 LD50 = Median lethal dose  
 LC0 = lethal concentration, 0%  
 LOAEL = lowest-observed-adverse-effect level  
 MARPOL = International Convention for the Prevention of Marine Pollution from Ships  
 NOAEL = No Observed Adverse Effect Level  
 NOEC = No Observed Effect Concentration  
 PBT = Persistent, Bioaccumulative and Toxic substance  
 PNEC = Predicted No-Effect Concentration  
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals  
 STP = Sewage Treatment Plant  
 TLV@/TWA = Threshold limit value – time-weighted average  
 TLV@STEL = Threshold limit value – short-time exposure limit  
 VOC = Volatile Organic Compounds  
 vPvB = very Persistent and very Bioaccumulative

**16.3 Other information****Classification procedure**

Skin Corr. 1A: H314 Causes severe skin burns and eye damage. (Calculation method)  
 Met. Corr. 1: H290 May be corrosive to metals. (Calculation method)

**Modified position**

none



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