

GHM Messtechnik GmbH Standort Greisinger
93128 Regenstauf

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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 (GB) CLP]

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 carefully and follow all instructions.
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.

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SECTION 3: Composition / Information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
6 -7	Potassium hydroxide
	CAS: 1310-58-3
	GHS/CLP: Met. Corr. 1: H290 - Skin Corr. 1A: H314 - Acute Tox. 4: H302
	SCL [%]: ≥ 5 : Skin Corr. 1A: H314, ≥ 2 - < 5 : Skin Corr. 1B: H314, $\geq 0,5$ - < 2 : Eye Irrit. 2: H319, $\geq 0,5$ - < 2 : Skin Irrit. 2: H315

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.
Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds.

Eye contact

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

Ingestion

Rinse out mouth and give plenty of water to drink.
Do not induce vomiting.
Consult a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

Product is caustic.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to your 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.

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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.

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

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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
Short-term exposure (15-minute): 2 mg/m ³

DNEL

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

PNEC

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

8.2 Exposure controls

Additional advice on system design	Using suitable discharges or exhaust ventilation.
Eye protection	Tightly fitting goggles (EN 166:2001).
Hand protection	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).
Skin protection	Alkaline-resistant protective and long-sleeved work clothing.
Other	Avoid contact with eyes and skin.
Respiratory protection	Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, combination filter B-P1. (DIN EN 14387)
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Protect the environment by applying appropriate control measures to prevent or limit emissions.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	colourless
Odor	pungent
Odour threshold	not determined
pH-value	< 2
pH-value [1%]	not determined
Boiling point [°C]	not determined
Flash point [°C]	not applicable
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/cm ³]	not determined
Relative density	not determined
Bulk density [kg/m ³]	not applicable
Solubility in water	completely miscible
Solubility other solvents	No information available.
Partition coefficient [n-octanol/water]	not determined
Kinematic viscosity	not determined
Relative vapour density	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Auto-ignition temperature	not applicable
Decomposition temperature [°C]	not determined
Particle characteristics	not applicable

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

Aqueous solutions will react with aluminium, generating hydrogen gas.

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.

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10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Product
ATE-mix, oral, > 2000 mg/kg
Substance
Potassium hydroxide, CAS: 1310-58-3
LD50, oral, Rat, > 214 -< 333 mg/kg

Acute dermal toxicity

Product
ATE-mix, dermal, Based on the available information, the classification criteria are not fulfilled.

Acute inhalational toxicity

Product
ATE-mix, inhalative, Based on the available information, the classification criteria are not fulfilled.

Serious eye damage/irritation

Risk of serious damage to eyes.
Based on the available information, the classification criteria are fulfilled.
Calculation method

Skin corrosion/irritation

Product is caustic.
Based on the available information, the classification criteria are fulfilled.
Calculation method

Respiratory or skin sensitisation

Based on the available information, the classification criteria are not fulfilled.

Specific target organ toxicity — single exposure

Based on the available information, the classification criteria are not fulfilled.

Specific target organ toxicity — repeated exposure

Based on the available information, the classification criteria are not fulfilled.

Mutagenicity

Based on the available information, the classification criteria are not fulfilled.

Reproduction toxicity

Based on the available information, the classification criteria are not fulfilled.

Carcinogenicity

Based on the available information, the classification criteria are not fulfilled.

Aspiration hazard

Based on the available information, the classification criteria are not fulfilled.

General remarks

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

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12.2 Persistence and degradability

Behaviour in environment compartments

No information available.

Behaviour in sewage plant

The product is an alkaline solution. Neutralization is normally necessary before a waste water is discharged into sewage treatment plants.

Biological degradability

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 Endocrine disrupting properties

No information available.

12.7 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 must be disposed of in accordance with national regulations.

Product

Dispose of as hazardous waste.

Contaminated packaging

Contaminated packing should be disposed of as product waste.

SECTION 14: Transport information

14.1 UN number or ID number

Transport by land according to ADR/RID 1814

Inland navigation (ADN) 1814

Marine transport in accordance with IMDG 1814

Air transport in accordance with IATA 1814


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14.2 UN proper shipping name

Transport by land according to ADR/RID Potassium hydroxide solution
- Classification Code C5
- Label 
- ADR LQ 1 l
- 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 l

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

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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 Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

TRANSPORT-REGULATIONS ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2021)

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

not applicable

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SECTION 16: Other information**16.1 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
 EL50 = Median effective loading
 ELINCS = European List of Notified Chemical Substances
 EmS = Emergency Schedules
 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
 IVIS = In vitro irritation score
 LC50 = Lethal concentration, 50%
 LD50 = Median lethal dose
 LC0 = lethal concentration, 0%
 LOAEL = lowest-observed-adverse-effect level
 LL50 = Median lethal loading
 LQ = Limited Quantities
 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

16.2 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

SECTION 4 been added: Product is caustic.
 SECTION 4 been added: Shield unaffected eye.
 SECTION 4 been added: Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds.
 SECTION 8 been added: Short term: filter apparatus, combination filter B-P1. (DIN EN 14387)
 SECTION 9 been added: colourless

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