

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 30.10.2023

Version number 3 (replaces version 2)

Revision: 30.10.2023

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

· **1.1 Product identifier**

· **Product name: 8N Potassium Hydroxide**

· **Catalog number:** 56Z098398, 56L098330, 56U098330, 56L098365, 56U098365

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

· **Application of the substance / the preparation:** Reagent for water analysis

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier:**

Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 (0)231 94510-0
e-mail: sales@lovibond.com

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom

phone : +44 1980 664800
e-mail: SDS@lovibond.uk

· **Informing department:**

e-mail: sds@lovibond.com
Product Safety Department

· **1.4 Emergency telephone number:**

+44 1235 239670
Languages: English

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

Met. Corr. 1 H290 May be corrosive to metals.
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

· **Hazard pictograms**



GHS05



GHS07

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

If swallowed or in case of vomiting, danger of entering the lungs
Subsequent observation for pneumonia and pulmonary oedema

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **5.2 Special hazards arising from the substance or mixture**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
 - **5.3 Advice for firefighters**
 - **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
 - **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.
-

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Avoid substance contact.
Ensure adequate ventilation
Use breathing protection against the effects of fumes/dust/aerosol.
 - **Advice for emergency responders:** Protective equipment: see section 8
 - **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
 - **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose of contaminated material as waste according to item 13.
 - **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.
-

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 - **Advice on safe handling:** Prevent formation of aerosols.
 - **Hygiene measures:**
Do not inhale gases / fumes / aerosols.
Do not get in eyes, on skin, or on clothing.
Take off immediately all contaminated clothing.
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke when using this product.
 - **7.2 Conditions for safe storage, including any incompatibilities**
 - **Requirements to be met by storerooms and containers:**
Store in cool location.
Unsuitable material for container:
aluminum (Al), tin (Sn), zinc (Zn)
 - **Information about storage in one common storage facility:**
Store away from metals.
see chapter 10
 - **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from the effects of light.
Protect from humidity and keep away from water.
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- **Recommended storage temperature:** 20°C +/- 5°C
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Components with limit values that require monitoring at the workplace:

CAS: 1310-58-3 potassium hydroxide

 WEL (Great Britain) Short-term value: 2 mg/m³

· Regulatory information WEL (Great Britain): EH40/2020

· DNELs

Derived No Effect Level (DNEL)

CAS: 1310-58-3 potassium hydroxide

Inhalative	DNEL	1 mg/m ³ (Worker / acute / local effects) (Merck)
		1 mg/m ³ (Consumer / long-term / local effects) (Merck)

· Recommended monitoring procedures:

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

· Additional information: The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Engineering measures:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

· Individual protection measures, such as personal protective equipment

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

· Eye/face protection

Tightly sealed safety glasses.

· Hand protection

Alkaline resistant gloves
Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

· Material of gloves

nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm

· Penetration time of glove material

Value for the permeation: Level = 1 (< 10 min)
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Other skin protection (body protection): Alkaline resistant protective clothing

· Breathing equipment: Use breathing protection against the effects of fumes/dust/aerosol.

· Recommended filter device for short term use: Filter P2

· Environmental exposure controls Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

- | | |
|---|---------------------------------|
| · Physical state | Fluid |
| · Form: | Solution |
| · Colour: | Colourless |
| · Odour: | Odourless |
| · Odour threshold: | Not applicable. |
| · Melting point/Freezing point: | Not determined. |
| · Boiling point or initial boiling point and boiling range | Not determined. |
| · Flammability | The product is not combustible. |
| · Explosive properties: | Product is not explosive. |

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· Lower and upper explosion limit	
Lower:	Not applicable.
Upper:	Not applicable.
· Flash point:	Not applicable.
· Auto-ignition temperature:	Not applicable.
· Decomposition temperature:	Not determined.
· pH at 20°C	>14
	Strongly alkaline
· Kinematic viscosity	Not determined.
· Solubility	
· Water:	Fully miscible
· Partition coefficient n-octanol/water (log value)	Not applicable (mixture).
· Vapour pressure:	Not determined.
· Density and/or relative density	
· Density at 20°C:	~1.32 g/cm ³
· Relative density:	Not determined.
· Relative gas density	Not determined.
· Particle characteristics	Not applicable (liquid).
9.2 Other information	
· Information with regard to physical hazard classes	
· Corrosive to metals	May be corrosive to metals.
· Metals that are corroded by the substance or mixture	Information on incompatible materials can be found in Sections 7 and 10.
· Other safety characteristics	
· Oxidising properties:	none
· Additional information	
· Solids content:	< 40 %
· Solvent content:	
· Organic solvents:	0 %
· Water:	> 60 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
 Reacts with metals forming hydrogen (Danger of explosion in case of large amounts!)
 Corrosive action on metals
 Reacts with alkaline earth metals
 Reacts with halogenated compounds
 Reacts with strong acids
 Reacts with ammonia (NH₃).
 Reacts with light alloys to form hydrogen
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
 metals
 light metals
 organic substances
 various plastics
 glass
- **10.6 Hazardous decomposition products:** see section 5

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity**
 Classification according to calculation procedure:
 Harmful if swallowed.

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· LD/LC50 values that are relevant for classification:		
CAS: 1310-58-3 potassium hydroxide		
Oral	LD50	333 mg/kg (rat) (OECD 425) (ECHA)

- **Skin corrosion/irritation** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes serious eye damage.
Risk of blindness!

· Information on components:		
CAS: 1310-58-3 potassium hydroxide		
Irritation of skin	OECD 404	(rabbit: burns)
Irritation of eyes	OECD 405	(rabbit: burns)

- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· Information on components:		
CAS: 1310-58-3 potassium hydroxide		
Sensitisation	OECD 406	(guinea pig: negative)

- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.

· Information on components:		
CAS: 1310-58-3 potassium hydroxide		
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (Escherichia coli / Salmonella typhimurium)	

- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

CAS: 1310-58-3 potassium hydroxide		
· (source: GESTIS) Main toxic effects: Acute: severe irritation and caustic effects on all contacted mucous membranes and skin; risk of irreversible eye damage Chronic: irritant effect on eyes, respiratory tract and skin Further information: Regardless of the route of exposure, the focus is on the local effect. The type and duration of exposure, concentration, pH value, dose and the time at which treatment measures are applied are essential for the extent of the damage. The greatest hazard is when the solid or solution comes into direct contact with the eye. Even highly diluted solutions can still cause severe damage. Rapidly progressive damage also occurs on the skin, even when diluted solutions act on it. Airborne exposure to KOH causes irritation of the respiratory tract (especially the nose and throat), eyes and skin. At high concentrations, damage to the lower airways and lungs cannot be ruled out.		

- **11.2 Information on other hazards**
- **Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **Other information**
According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:		
CAS: 1310-58-3 potassium hydroxide		
LC50	80 mg/l/96h (mosquitofish) (IUCLID)	

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- **12.2 Persistence and degradability** .
- **Other information:**
Mixture of inorganic compounds.
Methods for the determination of biodegradability are not applicable to inorganic substances.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
Forms corrosive mixtures with water even if diluted.
Avoid transfer into the environment.
Harmful effect due to pH shift.
- **Water hazard:**
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.



SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to disposers of hazardous waste.

<ul style="list-style-type: none"> · European waste catalogue 		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 2px;">16 05 07*</td> <td style="padding: 2px;">discarded inorganic chemicals consisting of or containing hazardous substances</td> </tr> </table>	16 05 07*	discarded inorganic chemicals consisting of or containing hazardous substances
16 05 07*	discarded inorganic chemicals consisting of or containing hazardous substances	

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- | | |
|---|-----------------------------------|
| <ul style="list-style-type: none"> · 14.1 UN number or ID number | UN1814 |
| <ul style="list-style-type: none"> · ADR, IMDG, IATA | |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name | 1814 POTASSIUM HYDROXIDE SOLUTION |
| <ul style="list-style-type: none"> · ADR · IMDG, IATA | POTASSIUM HYDROXIDE SOLUTION |
| <ul style="list-style-type: none"> · 14.3 Transport hazard class(es) | |
| <ul style="list-style-type: none"> · ADR | |
|  | |
| <ul style="list-style-type: none"> · Class · Label | 8 (C5) Corrosive substances.
8 |
| <ul style="list-style-type: none"> · IMDG, IATA | |
|  | |
| <ul style="list-style-type: none"> · Class · Label | 8 Corrosive substances.
8 |
| <ul style="list-style-type: none"> · 14.4 Packing group | II |
| <ul style="list-style-type: none"> · ADR, IMDG, IATA | |
| <ul style="list-style-type: none"> · 14.5 Environmental hazards: | Not applicable. |

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· 14.6 Special precautions for user	Warning: Corrosive substances.
· Kemler Number:	80
· EMS Number:	F-A,S-B
· Segregation groups	(SGG18) Alkalis
· Stowage Category	A
· Segregation Code	SG35 Stow "separated from" SGG1-acids
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

* SECTION 15: Regulatory information

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

 · **Poisons Act UK**

 · **Regulated explosives precursors**

None of the ingredients is listed.

 · **Regulated poisons**

None of the ingredients is listed.

 · **Reportable explosives precursors**

None of the ingredients is listed.

 · **Reportable poisons**

 The substance falls under reportable poisons due to the fact that the concentration is greater than/equal ($\geq x\%$) the stated mass percentage:

CAS: 1310-58-3 | potassium hydroxide

17% of total caustic alkalinity

 · **Regulation (EU) 2019/1148 on the marketing and use of explosives precursors** not regulated

 · **Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)**

None of the ingredients is listed.

 · **Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:**

None of the ingredients is listed.

 · **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

 · **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

 · **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**

None of the ingredients is listed.

 · **REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)**

None of the ingredients is listed.

 · **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)**

None of the ingredients is listed.

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- **Substances of very high concern (SVHC) according to REACH, Article 57**
This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).
 - **Substances of very high concern (SVHC) according to UK REACH**
This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).
 - **Directive 2012/18/EU (SEVESO III):**
 - **Named dangerous substances - ANNEX I** None of the ingredients is listed.
 - **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
 - **Information about limitation of use:** Employment restrictions concerning young persons must be observed (94/33/EC).
 - **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
-

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Training hints** Provide adequate information, instruction and training for operators.
 - **Relevant phrases**
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
 - **Abbreviations and acronyms:**
OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: half maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Met. Corr. 1: Corrosive to metals – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 - **Sources**
Data arise from safety data sheets, reference works and literature.
ECHA: European Chemicals Agency <http://echa.europa.eu>
GESTIS- Stoffdatenbank (Substance Database, Germany)
 - *** Data compared to the previous version altered.**
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