

## SAFETY DATA SHEET

Version 4.7  
Revision Date 06/13/2014  
Print Date 10/08/2014

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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Potassium hydroxide

Product Number : 221473  
Brand : Sigma-Aldrich  
Index-No. : 019-002-00-8

CAS-No. : 1310-58-3

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

Identified uses : Laboratory chemicals, Manufacture of substances

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

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Corrosive to metals (Category 1), H290  
Acute toxicity, Oral (Category 4), H302  
Skin corrosion (Category 1A), H314  
Serious eye damage (Category 1), H318  
Acute aquatic toxicity (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

H290 : May be corrosive to metals.  
H302 : Harmful if swallowed.  
H314 : Causes severe skin burns and eye damage.  
H402 : Harmful to aquatic life.

Precautionary statement(s)

P234 : Keep only in original container.  
P260 : Do not breathe dust or mist.  
P264 : Wash skin thoroughly after handling.  
P270 : Do not eat, drink or smoke when using this product.

P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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 or doctor/ physician.
P321	Specific treatment (see supplemental first aid instructions on this label).
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P405	Store locked up.
P406	Store in corrosive resistant stainless steel container with a resistant inner liner.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms	: Caustic potash
Formula	: HKO
Molecular Weight	: 56.11 g/mol
CAS-No.	: 1310-58-3
EC-No.	: 215-181-3
Index-No.	: 019-002-00-8

#### Hazardous components

Component	Classification	Concentration
<b>Potassium hydroxide</b>	Met. Corr. 1; Acute Tox. 4; Skin Corr. 1A; Eye Dam. 1; Aquatic Acute 3; H290, H302, H314, H402	90 - 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

- 4.2 Most important symptoms and effects, both acute and delayed**  
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
- 4.3 Indication of any immediate medical attention and special treatment needed**  
no data available

## 5. FIREFIGHTING MEASURES

- 5.1 Extinguishing media**  
**Suitable extinguishing media**  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.2 Special hazards arising from the substance or mixture**  
no data available
- 5.3 Advice for firefighters**  
Wear self contained breathing apparatus for fire fighting if necessary.
- 5.4 Further information**  
Gives off hydrogen by reaction with metals.

## 6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- 6.2 Environmental precautions**  
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- 6.3 Methods and materials for containment and cleaning up**  
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
- 6.4 Reference to other sections**  
For disposal see section 13.

## 7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**  
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.  
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed in a dry and well-ventilated place.  
Absorbs carbon dioxide (CO<sub>2</sub>) from air.  
  
Air sensitive. strongly hygroscopic
- 7.3 Specific end use(s)**  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Potassium hydroxide	1310-58-3	C	2 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye, skin, & Upper Respiratory Tract irritation		

		C	2 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		C	2 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |                                 |   |
|---------------------------------|---|
| a) Appearance                   | Form: pellets                               |
| b) Odour                        | no data available                           |
| c) Odour Threshold              | no data available                           |
| d) pH                           | 13.5  |
| e) Melting point/freezing point | Melting point/range: 361 °C (682 °F) - lit. |

- |   |  |
|---|--|
| f) Initial boiling point and boiling range      | 1,320 °C (2,408 °F)  |
| g) Flash point                                  | no data available  |
| h) Evaporation rate                             | no data available  |
| i) Flammability (solid, gas)                    | no data available  |
| j) Upper/lower flammability or explosive limits | no data available  |
| k) Vapour pressure                              | 1 hPa (1 mmHg) at 719 °C (1,326 °F)<br>1 hPa (1 mmHg) at 714 °C (1,317 °F) |
| l) Vapour density                               | no data available  |
| m) Relative density                             | 2.044 g/cm <sup>3</sup>  |
| n) Water solubility                             | soluble  |
| o) Partition coefficient: n-octanol/water       | no data available  |
| p) Auto-ignition temperature                    | no data available  |
| q) Decomposition temperature                    | no data available  |
| r) Viscosity                                    | no data available  |
| s) Explosive properties                         | no data available  |
| t) Oxidizing properties                         | no data available  |

## 9.2 Other safety information

Bulk density	1,300 kg/m <sup>3</sup>
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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Heat of solution is very high, and with limited amounts of water, violent boiling may occur  
Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

Do not heat above melting point.

### 10.5 Incompatible materials

Nitro compounds, Organic materials, Magnesium, Copper, Water, reacts violently with: Metals, Light metals, Contact with aluminum, tin and zinc liberates hydrogen gas. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts., vigorous reaction with: Alkali metals, Halogens, Azides, Anhydrides

### 10.6 Hazardous decomposition products

Other decomposition products - no data available  
In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - rat - 333 mg/kg

Inhalation: no data available

Dermal: no data available

no data available

**Skin corrosion/irritation**

Skin - rabbit

Result: Severe skin irritation - 24 h

**Serious eye damage/eye irritation**

Eyes - rabbit

Result: Corrosive to eyes

(OECD Test Guideline 405)

**Respiratory or skin sensitisation**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

no data available

no data available

**Specific target organ toxicity - single exposure**

no data available

**Specific target organ toxicity - repeated exposure**

no data available

**Aspiration hazard**

no data available

**Additional Information**

RTECS: TT2100000

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**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

Toxicity to fish LC50 - *Gambusia affinis* (Mosquito fish) - 80 mg/l - 96 h

**12.2 Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life.

no data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 1813      Class: 8      Packing group: II  
Proper shipping name: Potassium hydroxide, solid  
Reportable Quantity (RQ): 1000 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

### IMDG

UN number: 1813      Class: 8      Packing group: II      EMS-No: F-A, S-B  
Proper shipping name: POTASSIUM HYDROXIDE, SOLID  
Marine pollutant: No

### IATA

UN number: 1813      Class: 8      Packing group: II  
Proper shipping name: Potassium hydroxide, solid

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## 15. REGULATORY INFORMATION

### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Acute Health Hazard

### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Potassium hydroxide	1310-58-3	2007-03-01

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Potassium hydroxide	1310-58-3	2007-03-01

### New Jersey Right To Know Components

	CAS-No.	Revision Date
Potassium hydroxide	1310-58-3	2007-03-01

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Eye Dam.	Serious eye damage
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H402	Harmful to aquatic life.

**HMIS Rating**

Health hazard:	3
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

**NFPA Rating**

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

**Further information**

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**Preparation Information**

Sigma-Aldrich Corporation  
 Product Safety – Americas Region  
 1-800-521-8956

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