

## SAFETY DATA SHEET

Version 4.16

Revision Date 05/24/2016

Print Date 05/28/2016

---

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

Product name : Potassium hydroxide

Product Number : 484016  
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, Synthesis 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

---

**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.

H318

Causes serious 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 + P330        | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  |
| 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/shower.   |
| P304 + P340 + P310        | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.   |
| P305 + P351 + P338 + P310 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. |
| 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          |
| Registration number | : 01-2119487136-33-XXXX |

#### 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, H318, H402 | <= 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 firefighting 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**

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. 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

Storage class (TRGS 510): Non-combustible, corrosive hazardous materials

**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   | 2.000000 mg/m3     | USA. ACGIH Threshold Limit Values (TLV)   |
|                     | Remarks   | Upper Respiratory Tract irritation<br>Eye irritation<br>Skin irritation |                    |   |
|                     |           | C   | 2 mg/m3            | USA. ACGIH Threshold Limit Values (TLV)   |
|                     |           | Upper Respiratory Tract irritation<br>Eye irritation<br>Skin irritation |                    |   |
|                     |           | C   | 2.000000 mg/m3     | USA. NIOSH Recommended Exposure Limits  |
|                     |           | C   | 2 mg/m3            | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

#### Derived No Effect Level (DNEL)

| Application Area | Exposure routes | Health effect           | Value   |
|------------------|-----------------|-------------------------|---------|
| Workers          | Inhalation      | Long-term local effects | 1 mg/m3 |
| Consumers        | Inhalation      | Long-term local effects | 1 mg/m3 |

## 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: flakes   |
| 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                             | 1,120 g/l - 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> |
|--------------|-------------------------|

---

## 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

Hazardous decomposition products formed under fire conditions. - Potassium oxides

In the event of fire: see section 5

---

## 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

In vitro mammalian cell gene mutation test

mouse lymphoma cells

Result: negative

#### 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.

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

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

---

**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.

---

**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.

---

**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 1813            Class: 8                                      Packing group: II  
Proper shipping name: Potassium hydroxide, solid  
Reportable Quantity (RQ): 1000 lbs

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

**IATA**

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

---

**15. REGULATORY INFORMATION****SARA 302 Components**

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

**SARA 313 Components**

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.

---

## **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.                 |
| Met. Corr.    | Corrosive to metals                      |

### **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**

Copyright 2016 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

### **Preparation Information**

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

Version: 4.16

Revision Date: 05/24/2016

Print Date: 05/28/2016