SECTION 1: Identification

1.1. Identification

Product form: Substance
Substance name: Potassium Hydroxide
CAS-No.: 1310-58-3
Product code: LC19190
Formula: KOH
Synonyms: caustic potash / caustic potash dry / caustic potash, dry solid, flake, bead or granular / caustic potash, solid / caustic potash, solid / hydrate of potash / hydrate of potassium / hydroxide of potash / hydroxide of potassium / lye (=potassium hydroxide) / potash / potash hydrate / potash lye / potassium hydrate / potassium hydroxide (K(OH)) / potassium hydroxide dry / potassium hydroxide pellets / potassium hydroxide, dry solid, flake, bead or granular / potassium hydroxide, electrolytical, solid / potassium hydroxide, solid / Potassium hydroxide, solid / potassium lye

1.2. Recommended use and restrictions on use

Use of the substance/mixture: For laboratory and manufacturing use only.
Recommended use: Laboratory chemicals
Restrictions on use: Not for food, drug or household use

1.3. Supplier

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
Acute toxicity (oral) H302 Harmful if swallowed
Category 4
Skin corrosion/irritation H314 Causes severe skin burns and eye damage
Category 1A
Hazardous to the aquatic environment - Acute H402 Harmful to aquatic life
Hazard Category 3
Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling
Hazard pictograms (GHS-US): 

Signal word (GHS-US): Danger
Hazard statements (GHS-US):
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H402 - Harmful to aquatic life

Precautionary statements (GHS-US):
P260 - Do not breathe dust.
P264 - Wash exposed 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+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Potassium Hydroxide
Safety Data Sheet

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification: None under normal conditions.

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type: Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Hydroxide</td>
<td>(CAS-No.) 1310-58-3</td>
<td>100</td>
<td>Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td>(Main constituent)</td>
<td></td>
<td></td>
<td>Skin Corr. 1A, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 3, H402</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures


First-aid measures after inhalation: Remove the victim into fresh air. Doctor: administration of corticoid spray. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact: Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

First-aid measures after eye contact: Rinse immediately with plenty of water for 15 minutes. Cover eyes aseptically. Do not apply neutralizing agents. Take victim to an ophthalmologist.


4.2. Most important symptoms and effects (acute and delayed)


Symptoms/effects after skin contact: Caustic burns/corrosion of the skin. Slow-healing wounds.

Symptoms/effects after eye contact: Corrosion of the eye tissue. Permanent eye damage. Blindness.


Chronic symptoms: No effects known.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available
**SECTION 5: Fire-fighting measures**

- **5.1. Suitable (and unsuitable) extinguishing media**
  Suitable extinguishing media: EXTINGUISHING MEDIA FOR SURROUNDING FIRES: Adapt extinguishing media to the environment.
  Unsuitable extinguishing media: No unsuitable extinguishing media known.

- **5.2. Specific hazards arising from the chemical**
  Fire hazard: DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".
  Explosion hazard: INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".
  Reactivity: Violent exothermic reaction with water (moisture). Reacts on exposure to water (moisture) with combustible materials: risk of spontaneous ignition. Reacts on exposure to water (moisture) with (some) metals: release of highly flammable gases/vapours (hydrogen). Absors the atmospheric CO2. Violent to explosive reaction with many compounds e.g.: with organic material, with (some) halogens and with (some) acids: heat release resulting in increased fire or explosion risk.

- **5.3. Special protective equipment and precautions for fire-fighters**
  Firefighting instructions: Cool tanks/drums with water spray/remove them into safety. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

**SECTION 6: Accidental release measures**

- **6.1. Personal precautions, protective equipment and emergency procedures**
  6.1.1. For non-emergency personnel
  Measures in case of dust release: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

  6.1.2. For emergency responders
  Protective equipment: Equip cleanup crew with proper protection.
  Emergency procedures: Ventilate area. Stop release.

- **6.2. Environmental precautions**
  Prevent soil and water pollution. Prevent spreading in sewers.

- **6.3. Methods and material for containment and cleaning up**
  For containment: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Take account of toxic/corrosive precipitation water. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain.

  Methods for cleaning up: Collect the spill only if it is in a dry state. Wetted substance: cover with dry sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Take collected spill to manufacturer/competent authority. Small quantities of liquid spill: neutralize with dilute acid solution. Wash away neutralized product with plentiful water. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

- **6.4. Reference to other sections**
  No additional information available

**SECTION 7: Handling and storage**

- **7.1. Precautions for safe handling**
  Precautions for safe handling: Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Use corrosionproof equipment. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Avoid contact of substance with water. Observe very strict hygiene - avoid contact. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Storage temperature</th>
<th>20 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat-ignition</td>
<td>KEEP SUBSTANCE AWAY FROM: heat sources.</td>
</tr>
<tr>
<td>Prohibitions on mixed storage</td>
<td>KEEP SUBSTANCE AWAY FROM: combustible materials, oxidizing agents, strong acids, highly flammable materials, metals, organic materials, water/moisture.</td>
</tr>
<tr>
<td>Storage area</td>
<td>Store in a dry area. Keep container in a well-ventilated place. Keep locked up. Provide for a tub to collect spills. Unauthorized persons are not admitted. Meet the legal requirements.</td>
</tr>
<tr>
<td>Special rules on packaging</td>
<td>SPECIAL REQUIREMENTS: hermetical, watertight, corrosion-proof, dry, clean, correctly labelled, meet the legal requirements. Secure fragile packagings in solid containers.</td>
</tr>
<tr>
<td>Packaging materials</td>
<td>SUITABLE MATERIAL: steel, stainless steel, carbon steel, iron, nickel, cardboard, synthetic material, glass, stoneware/porcelain. MATERIAL TO AVOID: lead, aluminium, copper, tin, zinc, bronze, polyethylene.</td>
</tr>
</tbody>
</table>

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Potassium Hydroxide (1310-58-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
</tr>
<tr>
<td>NIOSH</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls

Appropriate engineering controls: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Materials for protective clothing:
GIVE EXCELLENT RESISTANCE: butyl rubber, natural rubber, neoprene, nitrile rubber. PVC, viton. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: leather, natural fibres. PVA

Hand protection:
Gloves

Eye protection:
Face shield

Skin and body protection:
Corrosion-proof clothing. In case of dust production: head/neck protection

Respiratory protection:
Dust production: dust mask with filter type P3. Self-contained breathing apparatus if conc. in air > 1 vol %

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid in various shapes. Powder.</td>
</tr>
</tbody>
</table>
Potassium Hydroxide
Safety Data Sheet

- Color: White to light yellow
- Odor: Odorless
- Odor threshold: No data available
- pH: 13.5 (0.60 %)
- pH solution: 0.6 %
- Melting point: 360 °C
- Freezing point: No data available
- Boiling point: No data available
- Flash point: Not applicable
- Relative evaporation rate (butyl acetate=1): No data available
- Flammability (solid, gas): No data available
- Vapor pressure: < 0.1 hPa (20 °C)
- Relative vapor density at 20 °C: No data available
- Relative density: 2 (20 °C)
- Specific gravity / density: 2044 kg/m³ (20 °C)
- Molecular mass: 56.11 g/mol
  Water: 112 g/100ml
- Log Pow: No data available
- Auto-ignition temperature: Not applicable
- Decomposition temperature: No data available
- Viscosity, kinematic: No data available
- Viscosity, dynamic: No data available
- Explosion limits: No data available
- Explosive properties: Not applicable.
- Oxidizing properties: None.

9.2. Other information
- Minimum ignition energy: Not applicable
- SADT: Not applicable
- VOC content: 0 %
- Other properties: Translucent. Hygroscopic. Substance has basic reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity
Violent exothermic reaction with water (moisture). Reacts on exposure to water (moisture) with combustible materials: risk of spontaneous ignition.
Reacts on exposure to water (moisture) with (some) metals: release of highly flammable gases/vapours (hydrogen). Absorbs the atmospheric CO2.
Violent to explosive reaction with many compounds e.g.: with organic material, with (some) halogens and with (some) acids: heat release resulting in increased fire or explosion risk.

10.2. Chemical stability
Hygroscopic. Absorbs atmospheric CO2.

10.3. Possibility of hazardous reactions
Reacts violently with water. Reacts violently with acids.

10.4. Conditions to avoid

10.5. Incompatible materials

10.6. Hazardous decomposition products
Potassium oxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Likely routes of exposure: Skin and eye contact
# Potassium Hydroxide Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## Acute toxicity

**Potassium Hydroxide (1310-58-3)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>333 mg/kg (Rat; Equivalent or similar to OECD 425; Experimental value)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>333 mg/kg body weight</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**

- Causes severe skin burns and eye damage.
  - pH: 13.5 (0.60 %)

**Respiratory or skin sensitization**

- Not classified
  - pH: 13.5 (0.60 %)

**Germ cell mutagenicity**

- Not classified

**Carcinogenicity**

- Not classified

**Reproductive toxicity**

- Not classified

**Specific target organ toxicity – single exposure**

- Not classified

**Specific target organ toxicity – repeated exposure**

- Not classified

**Aspiration hazard**

- Not classified

**Symptoms/effects after inhalation**


**Symptoms/effects after skin contact**

- Caustic burns/corrosion of the skin. Slow-healing wounds.

**Symptoms/effects after eye contact**

- Corrosion of the eye tissue. Permanent eye damage. Blindness.

**Symptoms/effects after ingestion**


**Chronic symptoms**

- No effects known.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Ecology - air**

- Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

**Ecology - water**

- Ground water pollutant. Harmful to fishes. Highly toxic to plankton. pH shift.

**Potassium Hydroxide (1310-58-3)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 2</td>
<td>80 mg/l (LC50; 96 h; Gambusia affinis; Static system; Fresh water)</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability

**Potassium Hydroxide (1310-58-3)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

**Potassium Hydroxide (1310-58-3)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
<td>Bioaccumulation: not applicable.</td>
</tr>
</tbody>
</table>

### 12.4. Mobility in soil

- No additional information available

### 12.5. Other adverse effects

- No additional information available
SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Should not be landfilled with household waste. Recycle/reuse. Immobilize the toxic or harmful components. Precipitate/make insoluble. Remove to an authorized dump (Class I). Treat using the best available techniques before discharge into drains or the aquatic environment.

Additional information: LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description: UN1813 Potassium hydroxide, solid, 8, II

UN-No.(DOT): UN1813

Proper Shipping Name (DOT): Potassium hydroxide, solid

Transport hazard class(es) (DOT): 8 - Class 8 - Corrosive material 49 CFR 173.136

Packing group (DOT): II - Medium Danger

Hazard labels (DOT): 8 - Corrosive

DOT Packaging Non Bulk (49 CFR 173.xxx): 212

DOT Packaging Bulk (49 CFR 173.xxx): 240

DOT Special Provisions (49 CFR 172.102): IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).

IP2 - When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.

IP4 - Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.

T3 - 2.65 178.274(d)(2) Normal............. 178.275(d)(2)

TP3 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx): 154

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27): 15 kg

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75): 50 kg

DOT Vessel Stowage Location: A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

DOT Vessel Stowage Other: 52 - Stow “separated from” acids

Other information: No supplementary information available.
Potassium Hydroxide
Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 15: Regulatory information

15.1. US Federal regulations

Potassium Hydroxide (1310-58-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not subject to reporting requirements of the United States SARA Section 313
RQ (Reportable quantity, section 304 of EPA’s List of Lists) 1000 lb
SARA Section 311/312 Hazard Classes Immediate (acute) health hazard

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date : 02/06/2018

Full text of H-phrases: see section 16:

<table>
<thead>
<tr>
<th>H302</th>
<th>Harmful if swallowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
</tbody>
</table>

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.
NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.
NFPA specific hazard : W - Materials that react violently or explosively with water.

Hazard Rating
Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability : 0 Minimal Hazard - Materials that will not burn
Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.
Personal protection : F - Safety glasses, Gloves, Synthetic apron, Dust respirator

SDS US LabChem

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