



**Be Right™**

# SAFETY DATA SHEET

Issue Date 07-Oct-2018

Revision Date 14-Jan-2019

Version 1.3

## 1. Identification

### Product identifier

**Product Name** Potassium Hydroxide Solution, 12 N

### Other means of identification

**Product Code(s)** 23032

### Recommended use of the chemical and restrictions on use

**Recommended Use** Laboratory reagent.

### Details of the supplier of the safety data sheet

#### **Manufacturer Address**

Hach Company P.O.Box 389 Loveland, CO 80539 USA +1(970) 669-3050

### Emergency telephone number

**Emergency Telephone** +1(303) 623-5716 - 24 Hour Service

## 2. Hazards identification

### Classification

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

### Label elements

**Signal word** - Danger

#### **Hazard statements**

H290 - May be corrosive to metals

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H402 - Harmful to aquatic life



Corrosion  
Exclamation mark

#### Precautionary statements

P270 - Do not eat, drink or smoke when using this product

P501 - Dispose of contents/ container to an approved waste disposal plant

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves/protective clothing/eye protection/face protection

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 [or shower]

P304 + P340 - IF INHALED: Remove person to fresh air and keep 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

P363 - Wash contaminated clothing before reuse

P405 - Store locked up

P273 - Avoid release to the environment

P234 - Keep only in original packaging

P390 - Absorb spillage to prevent material damage

#### Other Hazards Known

Not applicable

### 3. Composition/information on ingredients

#### Substance

Not applicable.

#### Mixture

Chemical name	CAS No.	Synonyms	Percent Range
Potassium hydroxide	1310-58-3	Caustic potash Potassium Hydroxide	50 - 60%

### 4. First aid measures

#### Description of first aid measures

##### General advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

##### Inhalation

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way

valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.

<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

#### **Most important symptoms and effects, both acute and delayed**

**Symptoms** Burning sensation.

#### **Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

### **5. Fire-fighting measures**

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Specific hazards arising from the chemical</b>	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
<b>Hazardous combustion products</b>	This material will not burn.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective actions for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

### **6. Accidental release measures**

#### **Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

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<b>Other information</b>	Refer to protective measures listed in Sections 7 and 8.
<b><u>Environmental precautions</u></b>	
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.
<b><u>Methods and material for containment and cleaning up</u></b>	
<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Pick up and transfer to properly labeled containers.
<b>Prevention of secondary hazards</b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. Handling and storage

### **Precautions for safe handling**

<b>Advice on safe handling</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.
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### **Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.
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## 8. Exposure controls/personal protection

### **Control parameters**

<b>Exposure Limits</b>	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
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### **Appropriate engineering controls**

<b>Engineering controls</b>	Showers Eyewash stations Ventilation systems.
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### **Individual protection measures, such as personal protective equipment**

<b>Eye/face protection</b>	Face protection shield.
<b>Hand protection</b>	Wear suitable gloves. Impervious gloves.
<b>Skin and body protection</b>	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>General hygiene considerations</b>	Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid

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contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid	<b>Color</b>	colorless
<b>Appearance</b>	aqueous solution	<b>Odor threshold</b>	No data available
<b>Odor</b>	Irritating		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Molecular weight</b>	No data available	
<b>pH</b>	14	
<b>Melting point/freezing point</b>	~ -13 °C / 9 °F	
<b>Boiling point / boiling range</b>	~ 100 °C / 212 °F	
<b>Evaporation rate</b>	0.07 (water = 1)	
<b>Vapor pressure</b>	3.525 mm Hg / 0.47 kPa at 25 °C / 77 °F	
<b>Vapor density (air = 1)</b>	0.62 (air = 1)	
<b>Specific gravity (water = 1 / air = 1)</b>	1.47	
<b>Partition Coefficient (n-octanol/water)</b>	Not applicable	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	Not applicable	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No data available	
<b>Dynamic viscosity</b>	51.45 cP (mPa s) at 20 °C / 68 °F	
<b>Kinematic viscosity</b>	35 cSt (mm <sup>2</sup> /s) at 20 °C / 68 °F	

### Solubility(ies)

#### Water solubility

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble	> 1000 mg/L	25 °C / 77 °F

#### Solubility in other solvents

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F

### Other Information

#### Metal Corrosivity

Classified as corrosive to metal according to GHS criteria

<b>Steel Corrosion Rate</b>	No data available
<b>Aluminum Corrosion Rate</b>	No data available

## Volatile Organic Compounds (VOC) Content

Chemical name	CAS No.	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Potassium hydroxide	1310-58-3	No data available	-

## Explosive properties

Upper explosion limit	No data available
Lower explosion limit	No data available

## Flammable properties

Flash point	No data available
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## Flammability Limit in Air

Upper flammability limit	No data available
Lower flammability limit	No data available

## Oxidizing properties

No data available.

## Bulk density

No data available

## 10. Stability and reactivity

**Reactivity** No information available.

**Chemical stability** Stable under normal conditions.

**Possibility of Hazardous Reactions** None under normal processing.

**Conditions to avoid** Exposure to air or moisture over prolonged periods.

**Incompatible materials** Oxidizing agent. Acids. Bases.

**Hazardous Decomposition Products** Thermal decomposition can lead to release of irritating and toxic gases and vapors.

## 11. Toxicological information

### Information on Likely Routes of Exposure

#### Product Information

<b>Inhalation</b>	Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.
<b>Eye contact</b>	Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
<b>Skin contact</b>	Corrosive. Causes severe burns. Avoid contact with skin and clothing.
<b>Ingestion</b>	Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark

blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

**Symptoms**

Redness. Burning. May cause blindness. Coughing and/ or wheezing.

**Acute toxicity**

Based on available data, the classification criteria are not met

**Product Acute Toxicity Data**

No data available.

**Ingredient Acute Toxicity Data**

Test data reported below.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium hydroxide (50 - 60%) CAS#: 1310-58-3	Rat LD <sub>50</sub>	333 mg/kg	None reported	None reported	Vendor SDS

**Unknown acute toxicity**

0 % of the mixture consists of ingredient(s) of unknown toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

**Acute Toxicity Estimations (ATE)**

The following values are calculated based on chapter 3.1 of the GHS document

<b>ATEmix (oral)</b>	628.00
<b>ATEmix (dermal)</b>	No information available
<b>ATEmix (inhalation-dust/mist)</b>	No information available
<b>ATEmix (inhalation-vapor)</b>	No information available
<b>ATEmix (inhalation-gas)</b>	No information available

**Skin corrosion/irritation**

Causes severe burns.

**Product Skin Corrosion/Irritation Data**

No data available.

**Ingredient Skin Corrosion/Irritation Data**

No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium hydroxide (50 - 60%) CAS#: 1310-58-3	Standard Draize Test	Human	50 mg	24 hours	Corrosive to skin	RTECS (Registry of Toxic Effects of Chemical Substances)

**Serious eye damage/eye irritation**

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

**Product Serious Eye Damage/Eye Irritation Data**

No data available.

**Ingredient Eye Damage/Eye Irritation Data**

No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium hydroxide (50 - 60%) CAS#: 1310-58-3	Existing human experience	Human	None reported	None reported	Corrosive to eyes	ERMA (New Zealand's Environmental Risk Management Authority)

**Respiratory or skin sensitization**

Based on available data, the classification criteria are not met.

**Product Sensitization Data**

No data available.

**Ingredient Sensitization Data**

No data available.

Chemical name	Test method	Species	Results	Key literature references and sources for data
Potassium hydroxide (50 - 60%) CAS#: 1310-58-3	Intracutaneous Test	Guinea pig	Not confirmed to be a skin sensitizer	IUCLID (The International Uniform Chemical Information Database)

**STOT - single exposure**

Based on available data, the classification criteria are not met.

**Product Specific Target Organ Toxicity Single Exposure Data**

No data available.

**Ingredient Specific Target Organ Toxicity Single Exposure Data**

No data available.

**STOT - repeated exposure**

Based on available data, the classification criteria are not met.

**Product Specific Target Organ Toxicity Repeat Dose Data**

No data available.

**Ingredient Specific Target Organ Toxicity Repeat Exposure Data**

No data available.

**Carcinogenicity**

Based on available data, the classification criteria are not met.

**Product Carcinogenicity Data**

No data available.

**Ingredient Carcinogenicity Data**

No data available.

Chemical name	CAS No.	ACGIH	IARC	NTP	OSHA
Potassium hydroxide	1310-58-3	-	-	-	-

**Legend**

<b>ACGIH (American Conference of Governmental Industrial Hygienists)</b>	Does not apply
<b>IARC (International Agency for Research on Cancer)</b>	Does not apply
<b>NTP (National Toxicology Program)</b>	Does not apply
<b>OSHA (Occupational Safety and Health Administration of the US Department of Labor)</b>	Does not apply

**Germ cell mutagenicity**

Based on available data, the classification criteria are not met.



**Product Germ Cell Mutagenicity invitro Data**

No data available.

**Ingredient Germ Cell Mutagenicity invitro Data**

No data available.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium hydroxide (50 - 60%) CAS#: 1310-58-3	Cytogenetic analysis	Rat ascites tumor	1800 mg/kg	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

**Product Germ Cell Mutagenicity invivo Data**

No data available.

**Ingredient Germ Cell Mutagenicity invivo Data**

No data available.

**Reproductive toxicity**

Based on available data, the classification criteria are not met.

**Product Reproductive Toxicity Data**

No data available.

**Ingredient Reproductive Toxicity Data**

No data available.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

## 12. Ecological information

**Ecotoxicity**

Harmful to aquatic life.

**Unknown aquatic toxicity**

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

**Product Ecological Data****Aquatic Acute Toxicity**

No data available.

**Aquatic Chronic Toxicity**

No data available.

**Ingredient Ecological Data****Aquatic Acute Toxicity**

No data available.

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Potassium hydroxide (50 - 60%) CAS#: 1310-58-3	96 hours	<i>Gambusia affinis</i>	LC <sub>50</sub>	80 mg/L	ERMA (New Zealand's Environmental Risk Management Authority)

**Aquatic Chronic Toxicity**

No data available.

**Persistence and degradability**

**Product Biodegradability Data**

No data available.

**Bioaccumulation****Product Bioaccumulation Data**

No data available.

**Partition Coefficient (n-octanol/water)**

Not applicable

**Mobility****Soil Organic Carbon-Water Partition Coefficient**

Not applicable

**Other adverse effects**

No information available.

**13. Disposal considerations****Waste treatment methods****Waste from residues/unused products**

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging**

Do not reuse empty containers.

**14. Transportation information****MEX**

Not regulated

**TDG**

UN/ID no	UN1814
Proper shipping name	Potassium Hydroxide, Solution
Hazard Class	8
Packing Group	II

**U.S. DOT**

UN/ID no	UN1814
Proper shipping name	Potassium Hydroxide, Solution
Hazard Class	8
Packing Group	II
Emergency Response Guide Number	154

**ICAO (air)**

Not regulated

**IATA**

UN/ID no	UN1814
Hazard Class	8
Packing Group	II
ERG Code	154

**IMDG**

UN/ID no	UN1814
Hazard Class	8
Packing Group	II

**RID**

Not regulated

**ADR**

<b>UNID no</b>	UN1814
<b>Proper shipping name</b>	Potassium Hydroxide, Solution
<b>Hazard Class</b>	8
<b>Packing Group</b>	II

**ADN**

Not regulated

**Additional information**

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

## 15. Regulatory information

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

**International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**International Inventories**

<b>TSCA</b>	Complies.
<b>DSL/NDSL</b>	Complies.
<b>EINECS/ELINCS</b>	Complies.
<b>ENCS</b>	Complies.
<b>IECSC</b>	Complies.
<b>KECL</b>	Complies.
<b>PICCS</b>	Complies.
<b>AICS</b>	Complies.

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

## 16. Other information

<b>NFPA</b>	<b>Health hazards</b> 3	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Physical and chemical properties</b> -
<b>HMIS</b>	<b>Health hazards</b> 3	<b>Flammability</b> 0	<b>Physical hazards</b> 0	<b>Personal protection</b> X

**Key or legend to abbreviations and acronyms used in the safety data sheet****Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	SKN*	Skin designation

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)

U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGl(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
RTECS (Registry of Toxic Effects of Chemical Substances)  
World Health Organization

**Prepared By** Hach Product Compliance Department.

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**Revision Date** 14-Jan-2019

**Revision Note** None

**NOM-018-STPS-2015**

**The information is believed to be accurate, but it is not exhaustive and must be used only as guidance. It is based on the current state of knowledge of the chemical substance or mixture and is applicable to the appropriate safety precautions for the product.**

**Disclaimer**

**USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.**

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**End of Safety Data Sheet**