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## Section 01 - Identification

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<b>Product Identifier</b>	pH Up (10% KOH)
<b>Other Means of Identification</b>	None
<b>Product Use and Restrictions on Use</b>	pH adjustment in water or waste water.
<b>Initial Supplier Identifier</b>	Advance Chemicals Ltd. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
<b>Prepared By</b>	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
<b>24-Hour Emergency Phone</b>	Phone: 1 (306) 664 – 2522

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## Section 02 - Hazard Identification

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### GHS-Classification

<b>Skin Corrosion/Irritation</b>	Category 1A
<b>Serious Eye Damage/Irritation</b>	Category 1

### Physical Hazards

<b>Corrosive to Metals</b>	Category 1
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### **Danger**

### **Hazards Statements**

H314 – Causes severe skin burns and eye damage.  
H290 – May be corrosive to metals.

### **Pictograms**



### **Precautionary Statements**

P234 – Keep only in original container.  
P405 – Store locked up.  
P260 – Do not breathe mist, vapours or spray.  
P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P280 – Wear protective gloves, protective clothing, eye protection, and face protection.

P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363 – Wash contaminated clothing before reuse.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301 + P330 + P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P310 – Immediately call a POISON CENTER or doctor/physician.

P390 – Absorb spillage to prevent material damage.

P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

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## Section 03 - Composition / Information on Ingredients

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Chemical Name	CAS Number	Weight %	Unique Identifiers
Potassium Hydroxide	1310-58-3	10%	
Water	7732-18-5	90%	

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## Section 04 - First Aid Measures

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<b>Inhalation</b>	If symptoms are experienced, remove victim to fresh air. If difficulties breathing persist, seek medical attention.
<b>Skin Contact / Absorption</b>	Remove contaminated clothing. Rinse skin with lukewarm, gently flowing water for 60 minutes. Seek immediate medical attention. Completely decontaminate clothing, shoes and leather goods before re-use or discard.
<b>Eye Contact</b>	Immediately flush eye(s) with lukewarm, gently flowing water for 60 minutes, while forcibly holding the eyelid(s) open to ensure complete irrigation of the eye tissue. If a contact lens is present, remove only if easy to do so. Neutral saline solution may be given as soon as it is available. Seek immediate medical attention.
<b>Ingestion</b>	Never give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Have victim rinse mouth with water. Do NOT induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Have victim rinse mouth again. Seek immediate medical attention.
<b>Additional Information</b>	Not Available.

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## Section 05 - Fire Fighting Measures

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<b>Suitable Extinguishing Media</b>	Use extinguishing agent suitable for surrounding fire. Proceed with caution if using water, as it can generate heat and cause spattering if applied directly to potassium hydroxide.
<b>Unsuitable Extinguishing Media</b>	Carbon dioxide.
<b>Specific Hazards Arising From the Chemical</b>	Potassium hydroxide can react with materials, such as acids, releasing enough heat to ignite nearby combustible materials. Potassium oxide fumes may be generated by thermal decomposition.
<b>Special Protective Equipment and Precautions for Fire-Fighters</b>	Wear NIOSH-approved self-contained breathing apparatus and protective gear.
<b>Further Information</b>	Not Available

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## Section 06 - Accidental Release Measures

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<b>Personal Precautions / Protective Equipment / Emergency Procedures</b>	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Flush with water to remove any residue.
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<b>Environmental Precautions</b>	Prevent product from entering sewers or waterways.
<b>Methods and Materials for Containment and Cleaning Up</b>	Solutions can be neutralized with acids such as acetic acid or hydrochloric acid. Clean up spill with non-reactive absorbent and place in suitable, labelled containers for proper disposal. LARGE SPILLS: Contact fire and emergency services and supplier for advice.

## Section 07 - Handling and Storage

<b>Precautions for Safe Handling</b>	This material is EXTREMELY CORROSIVE and HIGHLY REACTIVE. Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.
<b>Conditions for Safe Storage</b>	Store in a cool, dry, well-ventilated area. Keep quantity stored as small as possible. Store away from incompatibly materials.
<b>Incompatibilities</b>	Aluminum, tin, zinc, sodium borohydride, chlorine dioxide, nitrosomethylurea, tetrahydrofuran, maleic anhydride, nitrogen trichloride, nitrolalkanes, 2,4,5-trinitrotoluene, ammonium hexachloroplatinate, nitroaryl compounds, nitrobenzene, 2-nitrophenol, acetaldehyde, acrolein, acrylonitrile, allyl alcohol, 1,2-dichloroethylene, trichloroethylene, tetrachloroethane, phosphorus, potassium peroxodisulfate, hyponitrous acid, sugars, mineral acids, acetic acid, chloroform, methanol.

## Section 08 - Exposure Controls and Personal Protection

### Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Potassium Hydroxide	ACGIH	TLV-C	2 mg/m <sup>3</sup>
	OSHA	PEL-C	2 mg/m <sup>3</sup>

### Engineering Control(s)

<b>Ventilation Requirements</b>	Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.
<b>Other</b>	Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

### Protective Equipment

<b>Eyes/Face</b>	Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.
<b>Hand Protection</b>	Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
<b>Skin and Body Protection</b>	Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.  Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.
<b>Respiratory Protection</b>	NIOSH RECOMMENDATIONS FOR SODIUM HYDROXIDE CONCENTRATIONS IN AIR (3): Up to 10 mg/m <sup>3</sup> : (APF = 25) Any supplied-air respirator operated in a continuous-flow mode. Any powered air-purifying respirator with a high-efficiency particulate filter.

(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter. Any self-contained breathing apparatus with a full facepiece. Any supplied-air respirator with a full facepiece.

Thermal Hazards Not Available

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## Section 09 - Physical and Chemical Properties

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### Appearance

Physical State	Liquid
Colour	Clear
Odour	Odourless
Odour Threshold	Not Applicable

### Property

pH	14
Melting Point/Freezing Point	Not Available
Initial Boiling Point and Boiling Range	Not Available
Flash Point	Not Applicable
Evaporation Rate	The only evaporation that occurs is water.
Flammability	Non-flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapour Pressure (mm Hg, 20°C)	~0
Vapour Density (Air=1)	Not Available
Relative Density	Not Available
Solubility(ies)	Soluble in water. Soluble in ethanol, methanol and glycerol; insoluble in diethyl ether and ammonia.
Partition Coefficient: n-octanol/water	Not Applicable
Auto-ignition Temperature	Not Applicable
Decomposition Temperature	Not Available
Viscosity	Not Available
Explosive Properties	None
Specific Gravity (Water=1)	1.087

<b>% Volatiles by Volume</b>	Not Available
<b>Formula</b>	KOH
<b>Molecular Weight</b>	56.11

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## Section 10 - Stability and Reactivity

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<b>Reactivity</b>	Not Available
<b>Stability</b>	Stable.
<b>Possibility of Hazardous Reactions</b>	None reported.
<b>Conditions to Avoid</b>	Not Available
<b>Incompatible Materials</b>	Aluminum, tin, zinc, sodium borohydride, chlorine dioxide, nitrosomethylurea, tetrahydrofuran, maleic anhydride, nitrogen trichloride, nitrolalkanes, 2,4,5-trinitrotoluene, ammonium hexachloroplatinate, nitroaryl compounds, nitrobenzene, 2-nitrophenol, acetaldehyde, acrolein, acrylonitrile, allyl alcohol, 1,2-dichloroethylene, trichloroethylene, tetrachloroethane, phosphorus, potassium peroxodisulfate, hyponitrous acid, sugars, mineral acids, acetic acid, chloroform, methanol.
<b>Hazardous Decomposition Products</b>	Potassium oxide fumes may be generated by thermal decomposition at high temperatures.

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## Section 11 - Toxicological Information

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### Acute Toxicity

<b>Component</b>	<b>Oral LD<sub>50</sub></b>	<b>Dermal LD<sub>50</sub></b>	<b>Inhalation LC<sub>50</sub></b>
Potassium Hydroxide (10%)	2.05 g/kg (rat)	>12.6 g/kg (rabbit)	Not Available

### Chronic Toxicity – Carcinogenicity

<b>Component</b>	<b>IARC</b>
Potassium Hydroxide	IARC: has not evaluated the carcinogenicity of this chemical.

<b>Skin Corrosion/Irritation</b>	Potassium hydroxide is corrosive and is capable of producing severe burns, blisters, ulcers, and permanent scarring depending on the concentration of the solution and the duration of contact. Capable of penetrating deeper layers of skin causing permanent scarring and possibly death.
<b>Ingestion</b>	Potassium hydroxide is corrosive. Ingestion can result in burns to the lips, tongue, throat, esophagus and stomach; abdominal pain; nausea; vomiting; diarrhea and death.
<b>Inhalation</b>	If aerosols are inhaled, potassium hydroxide would probably cause severe irritation of the respiratory tract. In severe cases, a potentially fatal build-up of fluid in the lungs (pulmonary edema) could result.
<b>Serious Eye Damage/Irritation</b>	Potassium hydroxide is corrosive. It can penetrate deeply, causing severe eye burns and permanent injury, including blindness, depending on the concentration of the solutions and duration of contact.
<b>Respiratory or Skin Sensitization</b>	Potassium hydroxide is not known to be a skin sensitizer.
<b>Germ Cell Mutagenicity</b>	The available evidence does not suggest that potassium hydroxide is a mutagen.
<b>Reproductive Toxicity</b>	Potassium hydroxide is not known to cause reproductive toxicity.
<b>STOT-Single Exposure</b>	Not Available

<b>STOT-Repeated Exposure</b>	Not Available
<b>Aspiration Hazard</b>	Inhalation at concentrations higher than 2mg/m <sup>3</sup> may cause burns and tissue damage in upper respiratory tract. Pneumonitis can result from inhalation at high concentrations. Severe scarring of throat can occur after swallowing. Death may result from ingesting product.
<b>Synergistic Materials</b>	No information was located.

## Section 12 – Ecological Information

### Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Potassium Hydroxide	EC <sub>50</sub> (Algae, 120hr): 1337mg/L	LC <sub>50</sub> (Gambusia affinis, 96hr): 80mg/L	LC <sub>50</sub> (Gambusia affinis, 96hr): 80mg/L
<b>Biodegradability</b>	Material will disassociate into ionic form in an aquatic environment. Carbon dioxide will slowly neutralize material.		
<b>Bioaccumulation</b>	Product will not bioaccumulate.		
<b>Mobility</b>	Not Available		
<b>Other Adverse Effects</b>	May cause shifts in water pH outside the range of pH 5 -10. This change may be toxic to aquatic organisms.		

## Section 13 – Disposal Considerations

<b>Waste From Residues/Unused Products</b>	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
<b>Contaminated Packaging</b>	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

## Section 14 – Transport Information

<b>UN Number</b>	UN1814	
<b>UN Proper Shipping Name</b>	POTASSIUM HYDROXIDE SOLUTION	
<b>Transport Hazard Class(es)</b>	8	
<b>Packaging Group</b>	II	
<b>Environmental Hazards</b>	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.	
<b>Special Precautions</b>	Not Available	
<b>Transport in Bulk</b>	Not Available	
<b>Additional Information</b>	<u>Packing Group</u>	<u>Limited Quantity Index</u>
	II	1 L
	III	5 L

### TDG

<b>Other</b>	Secure containers (full and/or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.
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**TDG PRODUCT CLASSIFICATION:** This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

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## Section 15 – Regulatory Information

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**NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.**

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## Section 16 – Other Information

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**Preparation Date** December 14, 2015

**Note:** The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

### **Attention: Receiver of the chemical goods / SDS coordinator**

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution<sup>®</sup> initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

### **References:**

- 1) CHEMINFO
- 2) eChemPortal
- 3) TOXNET
- 4) Transportation of Dangerous Goods Canada
- 5) HSDB
- 6) ECHA
- 7) PAN

### **Advance Chemicals Ltd. - Locations**

**Corporate Head Office: 1500 Quebec Avenue, Saskatoon, SK, S7K 1V7**

**Phone: 1(306) 664 – 2522**

**Fax: 1(888) 281-8109**

[www.cleartech.ca](http://www.cleartech.ca)

**24 Hour Emergency Number - All Locations – 1(306) 664-2522**