MATERIAL SAFETY DATA SHEET

ELECTROLYZER AQUEOUS SOLUTION
Potassium Hydroxide aqueous solution < 1 wt. %

1. Product and Company Identification

Company Identification: See producer
Identification of the product: Potassium Hydroxide Aqueous Solution < 1 wt. %
Chemical Name & Family: KOH/H_2O
CAS: 1310-58-3 KOH, 7732-18-5 H_2O

Enapter Italy Srl
Via di Lavoria 56/G
56040 – Crespina (PI)
Italy

Phone: +39 050 644281
Fax: +39 050 642251
e-mail: info@enapter.com

2. Information of ingredients

Composition	wt. %
Potassium Hydroxide (KOH)	>0.85, <1.00
Water (H_2O)	> 99.00

3. Hazard Identification

May cause burns to skin, eyes, respiratory tract, and gastrointestinal tract. Material destructive to all body tissues.

Safety Data

Lab. Protective Equip: Goggles; Gloves; Lab coat;

Potential health Effects

Inhalation: Respiratory tract irritant may cause serious burns on acute contact. Severe injury is usually avoided by the self-limiting coughing and sneezing symptoms.

Ingestion: Toxic! Corrosive to mucous membranes and may cause perforation of the esophagus and stomach. Abdominal pain, nausea, vomiting, general gastro-intestinal upset can be expected.

Skin Contact: Irritant corrosive if contact is prolonged. Soreness, redness, destruction of skin may result.

Eye Contact: Irritant, corrosive to eye tissues. Tearing, redness, pain, impaired vision are symptoms.

Chronic Exposure: Development of a defeating dermatitis on prolonged contact with potassium hydroxide has been reported. Continued irritation may lead to increased susceptibility to respiratory illness.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems, or impaired kidney or respiratory function may be more susceptible to the effects of the substance.

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4. First aid measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation or redness develops or persists.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire – fighting measures

Fire: Not considered to be a fire hazard.

Pyrophoric/Auto ignition: No

Explosion: Not considered to be an explosion hazard.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

NFPA Ratings: Health: 2; Flammability: 0; Reactivity: 0; Contact: 2;

6. Accidental release measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not flush to sewer!

7. Handling and storage

Keep in a tightly closed container. Store in a cool, dry, ventilated area. Protect against physical damage. Separate from acids and alkalis. Protect from freezing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure controls / Personal protection

Airborne Exposure Limits (only available for the solid form):
- OSHA Permissible Exposure Limit (PEL): 2 mg/m^3 Ceiling
- ACGIH Threshold Limit value (TLV): 2 mg/m^3 Ceiling

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www.enapter.com *info@enapter.com*

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emission of the contaminant at its source, preventing dispersion of it into the general work area.

Respiratory Protection Equipment (NIOSH Approved): Not expected to require personal respirator usage. If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest.

Skin Protection: Gloves and lab coat, apron or coveralls.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical properties

Appearance: Clear, colorless solution. Odor: Odorless.

Solubility: Miscible in water. pH: 13.3 (0.179 M solution)

% Volatiles by volume @ 21°C: > 95 (as water)

Boiling Point: No information found.

Melting Point: No information found.

Vapor Density: No information found.

10. Stability and reactivity

Stability: Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products: Potassium oxide at very high temperatures.
Hazardous Polymerization: Will not occur.
Incompatibilities: Acids.
Conditions to Avoid: Incompatibles, excessive heat.

11. Toxicological information

For potassium hydroxide: Oral rat LD50: 273 mg/kg; Investigated as a mutagen
Skin Irritation Data (standard Draize, 50 mg/24h): Human, Severe; Rabbit, Severe
Eye Irritation Data (Rabbit, non-standard test,1 mg/24h, rinse): Moderate.
NTP Known Carcinogen: Potassium hydroxide, No
NTP Anticipated Carcinogen: Potassium hydroxide, No
IARC Category: Not assigned

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12. Ecological information

Environmental Fate: No information found

Environmental Toxicity: Potassium Hydroxide: TLm: 80 ppm/Mosquito fish/ 24 hr./ Fresh water

13. Disposal consideration

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport information

Not regulated.

15. Regulatory information

The solution contains < 1.0 wt. % of a hazardous substance (Potassium Hydroxide, KOH). KOH aqueous solution are considered as corrosive at concentration above 2.0 wt. %. Aqueous solution having concentration ranging from 0.5 wt. % to 2.0 wt. % are considered as irritant.

Symbol (s):	Xi, Irritant	
R Phrase (s):	R 22	Harmful if swallowed;
	R 36/38	Irritating to eyes and skin;
	R 43	May cause sensitization by skin contact;
	R52	Harmful to aquatic organisms;
S Phrase (s):	S 24/25	Avoid contact with skin and eyes;
	S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice;
	S 27	Take off immediately all contaminated clothing;
	S 28	After contact with skin, wash immediately with plenty of water;
	S 29/35	Do not empty into drains; dispose of this material and its container in a safe way;
	S 36/37/39	Wear suitable protective clothing, gloves and eye/face protection;
	S 62	If swallowed, do not induce vomiting: seek medical advice immediately and show this MSDS

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16. Other information

Further information: None
The contents and format of this MSDS are in accordance with EEC Commission Directive 93/112/EEC

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