

SECTION 1 – IDENTIFICATION

Product Identifier: 1M Potassium Hydroxide Solution
Ultra Pure Grade

Catalogue Number: 1313

Other means of identification: Not available

Recommended use of the chemical and restrictions on use:
For R&D use only. Not for pharmaceutical, household or other uses.

Supplier Information:

Axil Scientific Pte Ltd
2 Tukang Innovation Grove
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Singapore 618305

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Email: custcare@axilscientific.com

Apical Scientific Sdn Bhd
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Emergency phone number:

Monday – Friday, 8:00 a.m. to 6:00 p.m.
+65 6775 7318 (Singapore)
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SECTION 2 – HAZARDS IDENTIFICATION

GHS Classification:

Acute toxicity, oral, Category 4
Acute toxicity, dermal, Category 4

GHS Hazard Pictogram(s):



Signal Word: Danger

Hazards statements:

H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.

Precautionary statements:

Prevention:

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response

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/physician.

P363: Wash contaminated clothing before reuse.

Storage

P405: Store locked up.

Disposal

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3 – COMPOSITION/ INFORMATION ON INGREDIENTS

Chemical Identity:	Potassium Hydroxide
Synonyms:	Caustic potash Potassium hydrate
Molecular Formula:	KOH
Molecular Weight:	56.11 g/mol

Component	Classification	Concentration
Potassium hydroxide		
CAS-No: 1310-58-3 EC-No: 215-181-3	Met. Corr. 1; Acute Tox. 4; Skin Corr. 1; Eye Dam. 1; H290, H302, H314	5 – 10 %

SECTION 4 – FIRST-AID MEASURES

General Advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact

Immediately flush eyes with copious amounts of water for at least 15 minutes. Consult a physician.

Skin Contact

Immediately wash skin thoroughly with soap and copious amounts of water. Consult a physician.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration or if breathing is difficult, give oxygen. Consult a physician.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

Spasm, inflammation and edema of the larynx. Spasm, inflammation and edema of the bronchi. Pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Indication of immediate medical attention and special treatment needed

Data not available.

SECTION 5 – FIRE-FIGHTING MEASURES

Extinguishing Media

Use water spray, dry chemical powder, carbon dioxide or alcohol-resistant foam.

Special Exposure Hazards

Potassium oxides.

Special Fire-fighting Procedures

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions

Prevent skin/eye contact. Use personal protective equipment. Ensure adequate ventilation. Avoid breathing vapours, mist or gas. Evacuate personnel to safe areas.

Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not allow material into sewers and drainage systems.

Methods for Cleaning Up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling

Prevent skin/eye contact. Use personal protective equipment. Avoid inhalation of vapour or mist. Ensure adequate ventilation. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8 – EXPOSURE CONTROLS/ PERSONAL PROTECTION

Occupational Exposure Limits

Component	CAS-No.	Value	Control parameters	Basis
Potassium hydroxide	1310-58-3	PEL (short-term)	2 mg/m ³	Singapore. Workplace Safety and Health Act – First Schedule Permissible Exposure Limits of Toxic Substances

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice.

Eye/ Face Protection

Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin/ Hand 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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 30 min

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

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. 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 respirator with multi-purpose combination (US) or type ABEK (EN 14387) 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).

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

a)	Appearance	Clear colourless solution
b)	Odour	Odourless
c)	Odour Threshold	Not available
d)	pH	13.0 – 14.0 (Neat, 25 °C)
e)	Melting/freezing point	Not available

f)	Initial boiling point and boiling range	Not available
g)	Flash point	Not available
h)	Evaporation rate	Not available
i)	Flammability (solid, gas)	Not available
j)	Upper/lower flammability or explosive limits	Not available
k)	Vapour pressure	Not available
l)	Vapour density	Not available
m)	Relative density (25 °C)	1.456 g/cm ³
n)	Water solubility	Completely soluble
o)	Partition coefficient: n-octanol/water	Not available
p)	Autoignition temperature	Not available
q)	Decomposition temperature	Not available
r)	Viscosity	Not available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity

Data not available.

Chemical stability

Stable.

Possibility of hazardous reactions

Data not available.

Conditions to avoid

Data not available.

Incompatible material

Water, light materials, alkali metals, metals, organic materials, copper, various plastics, glass. Reacts violently with halogens, nitro compounds, magnesium, azides. Contact with aluminium, tin and zinc liberates hydrogen gas. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Potassium oxides

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute toxicity

Data not available.

Skin corrosion/irritation

Data not available.

Serious eye damage/eye irritation

Data not available.

Respiratory or skin sensitization

Data not available.

Germ cell mutagenicity

Data not available.

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.

Reproductive toxicity

Data not available.

Specific target organ toxicity – single exposure

Data not available.

Specific target organ toxicity – repeated exposure

Data not available.

Aspiration hazard

Data not available.

Other information

RTECS: Data not available.

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity

Data not available.

Persistence and degradability

Data not available.

Bioaccumulative potential

Data not available.

Mobility in soil

Data not available.

Other adverse effect

Harmful to aquatic life.

SECTION 13 – DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose off as unused product.

SECTION 14 – TRANSPORT INFORMATION

UN Number

ADR/RID: 1814

IMDG: 1814

IATA-DGR: 1814

UN Proper Shipping Name:

ADR/RID: Potassium hydroxide solution

IMDG: Potassium hydroxide solution

IATA-DGR: Potassium hydroxide solution

Transport Hazard Class(es)

ADR/RID: 8

IMDG: 8

IATA-DGR: 8

Packing Group

ADR/RID: II

IMDG: II

IATA-DGR: II

Environmental Hazards

ADR/RID: no

IMDG: marine pollutant: no

IATA-DGR: no

Special Precaution for Users

Based on chemical properties, choose appropriate tools and conditions of transport. Transporting tools shall be equipped with appropriate and sufficient firefighting equipment and emergency leaking installations. If transporting by road, please go along the specified route.

Incompatible materials

Water, Light metals, Alkali metals, Metals, Organic materials, Copper, reacts violently with:, vigorous reaction with:, Halogens, Nitro compounds, Magnesium, Azides, Contact with aluminum, tin and zinc liberates hydrogen gas. Contact with n formation of shock-sensitive salts.

SECTION 15 – REGULATORY INFORMATION

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

Data not available

SECTION 16 – OTHER INFORMATION

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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. Axil Scientific Pte Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.