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
#06-01, JTC MedTech Hub
Singapore 618305
Tel: +65 6775 7318
Email: custcare@axilscientific.com

Apical Scientific Sdn Bhd
No. 17, Jalan BS7/1C
Taman Perindustrian Bukit Serdang
43300 Seri Kembangan, Selangor, Malaysia
Tel: +603 8943 3252
Email: custcare@apicalscientific.com

Emergency phone number:

Monday – Friday, 8:00 a.m. to 6:00 p.m.
+65 6775 7318 (Singapore)
+603 8943 3252 (Malaysia)

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/m³	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

Date of Issue: JULY 11, 2008 **Date of Revision:** FEBRUARY 23, 2022

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.