

Reference Number :SDS4; Revision Date: 18/02/2016; Rev No: 05

POTASSIUM HYDROXIDE, 5% =< CONC. <51% Aqueous Solution

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifiers

-Product Name	:	POTASSIUM HYDROXIDE, CONC 5=<50%, aqueous solution
-Chemical Name	:	Potassium hydroxide
-Formula	:	KOH
-Molecular Mass	:	56.11 g/mol
-REACH Registration Number	:	01-2119487136-33-0000
-CAS number	:	1310-58-3
-EC index number	:	019-002-00-8
-EC number	:	215-181-3
-Rtecs number	:	TT2100000

1.2. Identified uses / preparation : Intermediate, pH regulation, Water Treatment, Laboratory, Detergents, Industrial Processing Aid, Paint Stripping, Metals Processing, Batteries, Cleaning, Formulation, Distribution

Uses advised against : None

1.3. Manufacturer or supplier's details

-Company	:	MICRO-BIO (IRELAND) LTD
-Address	:	Industrial Estate Fermoy Co Cork, Ireland
-Telephone	:	+3532531388
-Fax	:	+3532532458
-E-mail address	:	dobrien@micro-bio.ie

1.4. Emergency telephone number

-Emergency telephone number : +3532531388 (Available 24/7)

2. HAZARDS IDENTIFICATION

NFPA: 3-0-1

DSD / DPD

- Classified dangerous in accordance with Directives 67/548/EEC and 1999/45/EC
- Harmful if swallowed
- Causes severe burns

Other hazards

- May be corrosive to metals

CLP

- Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008
- Met. Corr. 1 May be corrosive to metals (H290)
- Acute Tox. 4 Harmful if swallowed (H302)
- Skin Corr. 1A Causes severe skin burns and eye damage (H314)



3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No EINECS/ELINCS	Conc.	Classification According to DSD/DPD	Classification according to CLP	Note
Potassium hydroxide	1310-58-3 215-181-3	50%	Xn; R22 C; R35	Met Corr 1; H290 Acute Tox 4; H302 Skin Corr 1A; H314	(1)(2)

4. FIRST AID MEASURES

4.1. After inhalation

- Remove the victim to fresh air.
- Respiratory problems: consult a doctor / medical service

4.2. Skin contact

- Wash immediately with lots of water (15 minutes) / shower
- Do not apply (chemical) neutralizing agents
- Remove clothing while washing
- Do not remove clothing if it sticks to the skin
- Cover wounds with sterile bandage
- Consult a doctor / medical service
- If burned surface >10%, take victim to hospital

4.3. Eye contact

- Rinse immediately with plenty of water for 15 minutes
- Cover eyes aseptically
- Do not apply neutralizing agents
- Take victim to an ophthalmologist

4.4. After ingestion

- Rinse mouth with water
- Immediately after ingestion: give lots of water to drink
- Do not induce vomiting
- Do not give activated charcoal
- Do not give chemical antidote
- Immediately consult a doctor / medical service

5. FIRE-FIGHTING MEASURES

5.1. Suitable Extinguishing media

- EXTINGUISHING MEDIA FOR SURROUNDING FIRES:
- All extinguishing media allowed

5.2. Unsuitable extinguishing media

- No unsuitable extinguishing media known

5.3. Special exposure hazards

- On heating: release of corrosive gases / vapours

5.4. Instructions

- Cool tanks / drums with water spray / remove them into safety
- Take account of toxic fire-fighting water
- Use water moderately and if possible collect or contain it

5.5. Special protective equipment for fire-fighters

- Gloves
- Face-shield
- Corrosion-proof suit
- Large spills / in enclosed spaces; compressed air apparatus
- Large spills / in enclosed spaces: gas-tight suit
- Heat / fire exposure; compressed air / oxygen apparatus

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions - See heading 8.2



6.2. Environmental precautions

- Contain released substance, pump into suitable containers
- Plug the leak, cut off the supply
- Dam up the liquid spill
- Take account of toxic / corrosive precipitation water
- Prevent soil and water pollution
- Prevent spreading in sewers
- See heading 13-Disposal Considerations.

6.3. Methods for cleaning up

- Take up liquid spill into inert absorbent material, e.g.: powdered limestone or dry sand / earth
- Scoop absorbed substance into closing containers
- Carefully collect the spill / leftovers
- Damaged / cooled tanks must be emptied
- Take collected spill to manufacturer / competent authority
- Neutralize small quantities of the liquid spill with sodium bisulfite
- Wash away neutralized product with plentiful water
- Clean contaminated surfaces with an excess of water
- Wash clothing and equipment after handling

7. HANDLING AND STORAGE

7.1. Handling

- Keep away from naked flames / heat
- Observe very strict hygiene – avoid contact
- Keep container tightly closed
- Use corrosion-proof equipment
- Do not discharge the waste into the drain

7.2. Storage

7.2.1. Safe storage requirements

- Store in a dry area
- Keep container in a well-ventilated place.
- Store at ambient temperature
- Keep locked up
- Provide for a tub to collect spills
- Unauthorized persons are not admitted
- May be stored under inert gas
- Meet the legal requirements
- Storage temperature: 20°C

7.2.2. Keep away from

- Oxidizing agents
- (strong) acids
- Highly flammable materials
- Metals
- Halogens
- Organic materials
- Water / moisture

7.2.3. Suitable packaging material

- Iron
- Synthetic material
- Glass
- Stoneware / porcelain

7.2.4. Non suitable packaging material

- Lead
- Aluminium
- Copper
- Tin
- Zinc
- Bronze

7.3. Specific use(s) - See information supplied by the manufacturer for the identified use(s)



8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Exposure limit values

8.1.1. Occupational Exposure

- If limit values are applicable and available, these will be listed below

Limit Value (Belgium)

Kaliumhydroxide	Momentary value	-ppm 2 mg/m ³
Kaliumhydroxide	Time-weighted average exposure limit	-ppm -mg/m ³

TLV (USA)

Potassium hydroxide	Momentary value	2mg/m ³
	Short time value	-mg/m ³
	Time-weighted average exposure limit	-mg/m ³

Limit Value (France)

Potassium (hydroxide de)	Short time value	-ppm 2 mg/m ³
	Time-weighted average exposure limit	-ppm -mg/m ³

Limit Value (UK)

Potassium hydroxide	Short time value	-ppm 2 mg/m ³
	Time-weighted average Exposure limit	-ppm -mg/m ³

8.1.2. Sampling methods

Product name	Test	Number	Sampling method	Remarks
Potassium Hydroxide	OSHA	CSI		
Potassium Hydroxide	OSHA	ID 121	Filter	

8.2. Exposure controls

8.2.1. Occupational exposure controls

- Measure the concentration in the air regularly.
- Carry operations in the open / under local exhaust / ventilation or with respiratory protection
- Personal protective equipment:
 - Respiratory protection:
Wear gas mask with filter type B if conc. In air > exposure limit
 - Hand protection:
Gloves
 - butyl rubber
 - natural rubber
 - neoprene
 - PVC
 - nitrile rubber
 - chloroprene rubber
 - chlorosulfonated polyethylene
 - tetrafluoroethylene
 - nitrile rubber / PVC
 - Eye protection:
Face shield
 - Skin protection:
Corrosion-proof clothing

8.2.2. Environmental exposure controls

See headings 6.2, 6.3 and 13



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information:

Physical form	Liquid
Odour	Odourless
Colour	Colourless

9.2. Important health, safety and environmental information:

pH	14
Solution concentration (pH)	5%
Boiling point	145°C
Flashpoint	Not applicable
Relative density	1.5
Dynamic viscosity	(20°C) 0.0087 Pa.s

9.3. Other information:

Melting point	6°C
Auto-ignition temperature	Not applicable

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid

Possible fire hazard

- Heat sources

Stability

- Hygroscopic
- Absorbs the atmospheric CO₂

Reactions

- Absorbs the atmospheric CO₂
- Violent to explosive reaction with many compounds e.g.: with organic material, with (some) halogens and with (some) acids: heat release resulting in increased fire or explosion risk

10.2. Materials to avoid

- Oxidizing agents
- (strong) acids
- highly flammable materials
- metals
- halogens
- organic materials
- water / moisture

10.3. Hazardous decomposition products

- Reacts with (some) metals and their compounds: release of highly flammable gases / vapours (hydrogen)
- On heating: release of corrosive gases / vapours

11. TOXICOLOGICAL INFORMATION

11.1. Acute toxicity

Potassium hydroxide, conc=50%, aqueous solution

LD50 oral (rat)	333 mg/kg
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11.2. Chronic toxicity

- Not listed in carcinogenicity class (IARC,EC,TLV,MAK)
- Not listed in mutagenicity class (EC,MAK)
- Not classified as toxic to reproduction (EC)

11.3. Acute effects / symptoms

Inhalation

EXPOSURE TO HIGH CONCENTRATIONS:

- Dry / sore throat
- Corrosion of the upper respiratory tract
- Respiratory difficulties



**POTASSIUM HYDROXIDE, CONC, 5%=<51%, Aqueous Solution - SAFETY DATA SHEET –
according to Regulation (EC) No. 1907/2006 (REACH) Article 31 and Annex II**

- Possible laryngeal spasm / oedema
- Risk of pneumonia

FOLLOWING SYMPTOMS MAY APPEAR LATER:

- Risk of lung oedema

Skin contact

- Caustic burns / corrosion of the skin
- Slow-healing wounds

Eye contact

- Corrosion of the eye tissue
- Blindness

Ingestion

- Abdominal pain
 - Blood in vomit
 - Difficulty in swallowing
 - Possible oesophageal perforation
 - Burns to the gastric / intestinal mucosa
- AFTER ABSORPTION OF HIGH QUANTITIES**
- Change in the haemogramme / blood composition
 - Disturbances of heart rate
 - Low arterial pressure
 - Blood in stool
 - Bleeding of the gastrointestinal tract
 - Shock

11.4. Chronic effects

ON CONTINUOUS / REPEATED EXPOSURE / CONTACT:

- Dry skin
- Skin rash / inflammation

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

Potassium hydroxide, conc = 50%, aqueous solution

LC50 fishes

Species	Value	Duration (h)	Remarks
	50-165 mg/l		PURE SUBSTANCE

EC50 Daphnia

Species	Value	Duration (h)	Remarks
	30-1000 mg/l		PURE SUBSTANCE

pH shift

12.2. Mobility

Volatile organic compounds (VOC)	Not applicable
Solubility in / reaction with water	Soluble in water
Soil physicochemical processes	Low potential for absorption in soil
Ground water	Ground water pollutant

12.3. Persistence and degradability

- BOD20
- Biodegradability: not applicable

12.4. Bioaccumulative potential

- Bioaccumulation: not applicable

12.5. Results of PBT assessment

- Not applicable, based on available data

12.6. Other adverse effects

- Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009)



13. DISPOSAL CONSIDERATIONS

13.1. Provisions relating to waste

- Waste material code (Directive 2008/98/EC, decision 2001/118/EC)
- 06 02 04* : sodium and potassium hydroxide
- Depending on branch of industry and production process, also other EURAL codes may be applicable
- Hazardous waste according to Directive 2008/98/EC

13.2. Disposal methods

- Recycle / reuse
- Precipitate / make insoluble
- Remove waste in accordance with local and / or national regulations
- Do not discharge unmonitored into the environment

13.3. Packaging / Container

- Waste material code packaging (Directive 2008/98/EC)
- 15 01 10* : packaging containing residues of or contaminated by dangerous substances

14. TRANSPORT INFORMATION

ADR

Proper shipping name	Potassium hydroxide solution
UN number	1814
Class	8
Packing group	II
Hazard identification number	80
Classification code	C5
Labels	8
Environmentally hazardous substance mark	no

RID

Proper shipping name	Potassium hydroxide solution
UN number	1814
Class	8
Packing group	II
Classification code	C5
Labels	8
Environmentally hazardous substance mark	no

ADN

Proper shipping name	Potassium hydroxide solution
UN number	1814
Class	8
Packing group	II
Classification code	C5
Labels	8
Environmentally hazardous substance mark	no

IMO

Proper shipping name	Potassium hydroxide solution
UN number	1814
Class	8
Packing group	II
Labels	8
Marine pollutant	
Environmentally hazardous substance mark	no

ICAO

Proper shipping name	Potassium hydroxide solution
UN number	1814
Class	8
Packing group	II
Labels	8
Environmentally hazardous substance mark	no



15. REGULATORY INFORMATION

15.1. EU Legislation

DSD / DPD

Enumerated in substance list Annex I of directive 67/548/EEC et sequens



Corrosive

Contains: potassium hydroxide, solid

R-phrases

22	Harmful if swallowed
35	Causes severe burns

S-phrases

(01/02)	(Keep locked up and out of the reach of children)
26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
36/37/39	Wear suitable protective clothing gloves, and eye/face protection
45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

CLP

Classification and labelling according to Regulation (EC) No 1272/2008 – Annex VI and after evaluation of available test data



Contains: potassium hydroxide, solid

Signal word

Dgr	Danger
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H-statements

H290	May be corrosive to metals
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage

P-statements

P280	Wear protective gloves, protective clothing and eye protection / face protection
P260	Do not breathe vapours
P310	Immediately call a POISON CENTRE or doctor / physician
P303+P361+P353	IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

15.2. National provisions

The Netherlands

Waterbezwaarlijkheid (for NL)

Waste identification other lists of waste materials

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LWCA (the Netherlands): KGA category 05

15.3. Specific community rules

REACH Annex XVII - Restriction

Enumerated in Annex XVII of Regulation (EC) No. 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles



16. OTHER INFORMATION

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances / preparations / mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances / preparations / mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances / preparations / mixtures in question.

Compliance with the instructions in this safety data sheet does not release the user from obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and / or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult your BIG licence agreement for details.

(*) = INTERNAL CLASSIFICATION (NFPA)

PBT – substances = persistent, bio accumulative and toxic substances

DSD Dangerous Substance Directive
DPD Dangerous Preparation Directive
CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

Full text of any R-phrases referred to under headings 2 and 3:

R22	Harmful if swallowed
R35	Causes severe burns

Full text of any H-statements referred to under headings 2 and 3

H290	May be corrosive to metals
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage

Full text of any classes referred to under headings 2 and 3

Acute Tox.	Acute toxicity
Met. Corr.	Substance or mixture corrosive to metals
Skin Corr.	Skin corrosion

Amendments

18/02/2016: Inclusion of Danger Pictogram in Section 2.

This SDS is only intended for the indicated country to which it is applicable. The European SDS format compliant with the applicable European legislation is not intended for use nor distribution in countries outside the European Union with the exception of Norway and Switzerland. Safety datasheets applicable in other countries/regions are available upon request. The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.

