

Safety Data Sheet

POTASSIUM HYDROXIDE SOLUTION

Safety Data Sheet dated 30/11/2022 version 2



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name: POTASSIUM HYDROXIDE SOLUTION 50%

UFI: X500-Y0GY-300S-Y1V1

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use: FOR INDUSTRIAL USE

FOR PROFESSIONAL USE

FOOD ADDITIVE

Uses advised against: N.A.

1.3. Details of the supplier of the safety data sheet

Company:

HydroChem Italia S.R.L.

Via Mario Massari, 30/32, 28886 Pieve Vergonte VB/ITALY

Phone +39 0324 8601

Fax +39 0324 86694

Homepage www.hydrochemitalia.it

Competent person responsible for the safety data sheet: sds@hydrochemitalia.it

1.4. Emergency telephone number

Company: +39 0324 8601 Mo-Fr 8:00-17:00

Malta: 112

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

Acute Tox. 4	Harmful if swallowed.
Skin Corr. 1A	Causes severe skin burns and eye damage.
Eye Dam. 1	Causes serious eye damage.
Met. Corr. 1	May be corrosive to metals.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Pictograms and Signal Words



Danger

Hazard statements

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

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/clothing and eye/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
3	
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
8	

P310 Immediately call a doctor.

Contains

Potassium hydroxide; caustic potash

Special provisions according to Annex XVII of REACH and subsequent amendments:

None.

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: POTASSIUM HYDROXIDE SOLUTION

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Numb.	Classification	Registration Number
$\geq 40 - < 50$ %	Potassium hydroxide; caustic potash	CAS:1310-58-3 EC:215-181-3 Index:019-002- 00-8	Met. Corr. 1, H290 Skin Corr. 1A, H314 Acute Tox. 4, H302 Specific Concentration Limits: 0.5% \leq C < 2%: Skin Irrit. 2 H315 0.5% \leq C < 2%: Eye Irrit. 2 H319 2% \leq C < 5%: Skin Corr. 1B H314 5% \leq C < 100%: Skin Corr. 1A H314	01-2119487136-33-0091

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Wash immediately with water.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

In case of persistent skin irritation consult a doctor.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and hazard labelling.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

Give nothing to eat or drink.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

4.2. Most important symptoms and effects, both acute and delayed

Impairment of vision

4.3. Indication of any immediate medical attention and special treatment needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Foam, extinguishing powder, sprinkling water jet, carbon dioxide.

According to the materials involved in the fire.

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Product itself is non-combustible.

Hazardous combustion products:

In case of fire, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide.

Toxic gases

5.3. Advice for firefighters

Wear suitable protective clothing (helmet, protective clothings, goggles, fire resistant gloves, boots) and protect respiratory organs (self contained breathing apparatus).

Use suitable breathing apparatus .

Cool the containers exposed to the fire with water.

Move undamaged containers from immediate hazard area if it can be done safely.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand

Dispose of the collected material in accordance with the current regulations.

Wash with plenty of water.

Retain contaminated washing water and dispose it.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Advice on general occupational hygiene:

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.

Incompatible materials:

Keep away from acids.

Keep away from oxidizing agents

See subsection 10

Instructions as regards storage premises:

Keep this product in a dry place.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Adequately ventilated premises.

Packaging materials:

Keep containers tightly closed and properly labelled.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Cou ntry g	Ceilin g	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Notes
Potassium hydroxide; caustic potash CAS: 1310-58-3	National	DEN MAR K	C	2.000		2.000		Skin
	National	AUS TRIA		2				inhalable aerosol
	National	SWE DEN		1.000		2		15 minutes average value
	National	POL AND		0.500		1.000		
	National	SPAI N		2.000				
	National	HUN GAR Y		2.000		2.000		
	National	FRA NCE				2.000		
	National	BEL GIU M				2.000		15 minutes average
	National	FINL AND	C			2.000		
	National	NEW ZEA LAN D	C			2.000		
	MAK			2.000				
	ACGIH		C			2.000		URT, eye, and skin irr

Derived No Effect Level (DNEL) values

	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency	Remark
Potassium hydroxide; caustic potash CAS: 1310-58-3	1 mg/m3		1 mg/m3	Human Inhalation	Long Term, local effects	

8.2. Exposure controls

Individual protection measures:

Personal protective equipment selections vary based on potential exposure conditions and working conditions.

The final choice of protective equipment will depend upon a risk assessment.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Please see both sections 5 and 6 for information about personal protective equipment to be worn in an emergency (e.g.: fire or unintentional release of the substance).

Eye protection:

Basket eye glasses.

Protection for skin:

Wear chemical resistant clothing.

Protection for hands:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Glove suitability and breakthrough time will differ depending on the specific use conditions.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Wear suitable gloves tested to EN374.

Suitable gloves type:

For continuous contact, gloves with a penetration time of ≥ 480 minutes are suitable.

Suitable material:

NBR (nitrile rubber).

PVC (polyvinyl chloride).

NR (natural rubber, natural latex).

Neoprene

Respiratory protection:

Depending on the potential for exposure, select respiratory protective equipment suitable for the specific conditions of use and in compliance with current legislation.

Technical reference standard: UNI EN 136 - 140 - 143 - 149

With potential for aerosol/mist generation:

Mask with filter "P2", white colour

Thermal Hazards:

N.A.

Environmental exposure controls:

Comply with the applicable environmental regulations limiting discharge to air, water and soil.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Color: Colourless

Odour: Characteristic

Odour threshold:

pH: 14

Kinematic viscosity: N.A.

Melting point / freezing point: <0°C

Initial boiling point and boiling range: 145°C

Flash point: Not Relevant (Does not apply to inorganic products.)

Upper/lower flammability or explosive limits: N.A.

Vapour density: N.A.

Vapour pressure: 3 mmHg (25°C)

Relative density: Not Relevant

Solubility in water: Very soluble

Solubility in oil: N.A.

Partition coefficient (n-octanol/water): Not Relevant (Does not apply to inorganic products.)

Auto-ignition temperature: N.A. (non-flammable)

Decomposition temperature: N.A. (No data available for the product)

Flammability: Non-flammable

Volatile Organic compounds - VOCs = N.A.

Particle characteristics:

Particle size: Not Relevant (Does not apply to liquid.)

Nanoforms: Not Relevant

9.2. Other information

Miscibility: N.A.

Conductivity: N.A.

Explosive properties: (There are no chemical groups present in the molecule which are associated with these properties)

Oxidizing properties: (There are no chemical groups present in the molecule which are associated with these properties)

Evaporation rate: N.A.

No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Danger due to exothermic reactions. May be corrosive to metals.

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Forms hydrogen by reaction with metals. Exothermic reaction with acids. Reacts with water.

10.4. Conditions to avoid

Mixtures with water, acids or incompatible materials which can cause sprays and release of a large amount of heat. It can react with some metals forming flammable hydrogen.

Stable under normal conditions.

10.5. Incompatible materials

Keep separate from: heat sources, oxidising agents, highly flammable materials, halogens, organic materials. Keep away from: lead, aluminium, copper, tin, zinc, bronze.

None in particular.

10.6. Hazardous decomposition products

Heating can cause water to evaporate with the formation of caustic mist.

Absorbs atmospheric carbon dioxide. Hydrogen: reacts with (some) metals and their compounds: emission of highly flammable gas.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicological Information of the Preparation

a) acute toxicity	The product is classified: Acute Tox. 4(H302)
b) skin corrosion/irritation	The product is classified: Skin Corr. 1A(H314) Skin Corrosive Positive
c) serious eye damage/irritation	The product is classified: Eye Dam. 1(H318) Eye Corrosive Positive - OECD 405
d) respiratory or skin sensitisation	Not classified Based on available data, the classification criteria are not met
e) germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

Potassium hydroxide; caustic potash	a) acute toxicity	LD50 Oral Rat 333 mg/kg bw	OECD 425
	b) skin corrosion/irritation	Skin Corrosive Positive	
	c) serious eye damage/irritation	Eye Corrosive Positive	
	d) respiratory or skin sensitisation	Skin Sensitization Guinea pig Negative	
	e) germ cell mutagenicity	Mutagenesis Negative	Ames test - in vitro gene r study in bacteria

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

List of Eco-Toxicological properties of the product

Not classified for environmental hazards.

No data available for the product

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

12.7. Other adverse effects

The product is an alkaline solution. Neutralisation is normally necessary prior to the discharge of waste water into the sewage treatment plant.

Prior to discharge into sewage treatment plants, obtain permission from the competent authorities.

Possible harmful effect would result from the pH effect.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number or ID number

1814

14.2. UN proper shipping name

ADR-Shipping Name: POTASSIUM HYDROXIDE SOLUTION

IATA-Technical name: POTASSIUM HYDROXIDE SOLUTION

IMDG-Technical name: POTASSIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es)

ADR-Class: 8

IATA-Class: 8

IMDG-Class: 8

14.4. Packing group

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-A, S-B

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 8

ADR - Hazard identification number: 80

ADR-Special Provisions: -

ADR-Transport category (Tunnel restriction code): 2 (E)

Air (IATA):

IATA-Passenger Aircraft: 851

IATA-Cargo Aircraft: 855

IATA-Label: 8

IATA-Subsidiary hazards: -

IATA-Erg: 8L

IATA-Special Provisions: A3 A803

Sea (IMDG):

IMDG-Stowage Code: Category A

IMDG-Stowage Note: SG35 SGG18

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: -

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

Regulation (EU) n. 2020/878

Regulation (EC) n. 1907/2006 (REACH) and subsequent amendments

Regulation (EC) n. 1272/2008 (CLP) and subsequent amendments

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3

Restrictions related to the substances contained: 75

Provisions related to directive EU 2012/18 (Seveso III):

N.A.

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

Where applicable, refer to the following regulatory provisions :

German Water Hazard Class.

Class 1: slightly hazardous for water.

SVHC Substances:

No data available

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

Substances for which a Chemical Safety Assessment has been carried out:

Potassium hydroxide; caustic potash

SECTION 16: Other information

Code	Description
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Code	Hazard class and hazard category	Description
2.16/1	Met. Corr. 1	Substance or mixture corrosive to metals, Category 1
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/1A	Skin Corr. 1A	Skin corrosion, Category 1A
3.3/1	Eye Dam. 1	Serious eye damage, Category 1

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
3.1/4/Oral	Calculation method
3.2/1A	On basis of test data (pH)
3.3/1	On basis of test data (pH)
2.16/1	On basis of test data

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ATE: Acute Toxicity Estimate
ATEmix: Acute toxicity Estimate (Mixtures)
BCF: Biological Concentration Factor
BEI: Biological Exposure Index
BOD: Biochemical Oxygen Demand
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CAV: Poison Center
CE: European Community
CLP: Classification, Labeling, Packaging.
CMR: Carcinogenic, Mutagenic and Reprotoxic
COD: Chemical Oxygen Demand
COV: Volatile Organic Compound
CSA: Chemical Safety Assessment
CSR: Chemical Safety Report
DMEL: Derived Minimal Effect Level
DNEL: Derived No Effect Level.
DPD: Dangerous Preparations Directive
DSD: Dangerous Substances Directive
EC50: Half Maximal Effective Concentration
ECHA: European Chemicals Agency
EINECS: European Inventory of Existing Commercial Chemical Substances.
ES: Exposure Scenario
GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAFH: KAFH
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/D: Not defined/ Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration.
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

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