

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: August 22, 2020

1 Identification

- **Product identifier**
- **Trade name: Potassium Hydroxide Solution**
- **Product code:** PH9294SS
- **Recommended use and restriction on use**
- **Recommended use:**
Laboratory chemicals
Not applicable
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
AquaPhoenix Scientific, Inc.
860 Gitts Run Road
Hanover, PA 17331 USA
Tel +1 (717)632-1291
Toll-Free: (866)632-1291
info@aquaphoenixsci.com
- **Distributor:**
AquaPhoenix Scientific
860 Gitts Run Road,
Hanover, PA 17331
(717) 632-1291
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Flam. Liq. 2 H225 Highly flammable liquid and vapor.
Met. Corr.1 H290 May be corrosive to metals.
Acute Tox. 3 H301 Toxic if swallowed.
Acute Tox. 3 H311 Toxic in contact with skin.
Acute Tox. 3 H331 Toxic if inhaled.
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.
STOT SE 1 H370 Causes damage to the central nervous system and optic nerve.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



GHS02 GHS05 GHS06 GHS08

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· **Signal word:** Danger

· **Hazard statements:**

- H225 Highly flammable liquid and vapor.
 H290 May be corrosive to metals.
 H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.
 H314 Causes severe skin burns and eye damage.
 H370 Causes damage to the central nervous system and optic nerve.

· **Precautionary statements:**






- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P233 Keep container tightly closed.
 P234 Keep only in original container.
 P240 Ground/bond container and receiving equipment.
 P241 Use explosion-proof electrical/ventilating/lighting/equipment.
 P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P260 Do not breathe the mist/vapors/spray.
 P264 Wash thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P311 Call a poison center/doctor.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
 P370+P378 In case of fire: Use for extinction: Alcohol resistant foam or water spray.
 P390 Absorb spillage to prevent material damage.
 P403+P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
 P406 Store in corrosive resistant container with a resistant inner liner.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

67-56-1	Methanol  Flam. Liq. 2, H225  Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331  STOT SE 1, H370	90%
1310-58-3	Potassium hydroxide  Met. Corr. 1, H290; Skin Corr. 1A, H314  Acute Tox. 4, H302	10%

· **Additional information:**

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For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.
For the wording of the listed Hazard Statements, refer to section 16.

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
 - Supply fresh air.
 - Seek immediate medical advice.
 - Provide oxygen treatment if affected person has difficulty breathing.
 - If experiencing respiratory symptoms: Call a poison center/doctor.
- **After skin contact:**
 - Immediately rinse with water.
 - If skin irritation continues, consult a doctor.
 - Seek immediate help for blistering or open wounds.
- **After eye contact:**
 - Protect unharmed eye.
 - Remove contact lenses if worn.
 - Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
 - Rinse out mouth and then drink plenty of water.
 - Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed:**
 - Breathing difficulty
 - Dizziness
 - Coughing
 - Strong caustic effect on skin and mucous membranes.
 - Nausea in case of ingestion.
 - Gastric or intestinal disorders when ingested.
 - Vision disorders.
 - Blindness
 - Disorientation
 - Unconsciousness
- **Danger:**
 - Danger of gastric perforation.
 - Danger of impaired breathing.
 - Causes serious eye damage.
 - Toxic if swallowed, in contact with skin or if inhaled.
 - Causes damage to the central nervous system and optic nerve.
- **Indication of any immediate medical attention and special treatment needed:**
 - Medical supervision for at least 48 hours.
 - If necessary oxygen respiration treatment.
 - If medical advice is needed, have product container or label at hand.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**

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- Alcohol resistant foam
- Gaseous extinguishing agents
- Carbon dioxide
- Water fog / haze
- Fire-extinguishing powder
- **For safety reasons unsuitable extinguishing agents:** No relevant information available.
- **Special hazards arising from the substance or mixture**
- Highly flammable liquid and vapor.
- Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**
- Wear self-contained respiratory protective device.
- Wear fully protective suit.
- **Additional information:**
- Eliminate all ignition sources if safe to do so.
- Use large quantities of foam as it is partially destroyed by the product.
- Cool endangered containers with water fog.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
- Isolate area and prevent access.
- Wear protective equipment. Keep unprotected persons away.
- Ensure adequate ventilation.
- Keep away from ignition sources.
- Use respiratory protective device against the effects of fumes/dust/aerosol.
- Protect from heat.
- **Environmental precautions** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**
- Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).
- Send for recovery or disposal in suitable receptacles.
- **Reference to other sections**
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
- Avoid splashes or spray in enclosed areas.
- Prevent formation of aerosols.
- Use only in well ventilated areas.
- **Information about protection against explosions and fires:**
- Highly flammable liquid and vapor.
- Keep ignition sources away - Do not smoke.
- Protect against electrostatic charges.
- Keep respiratory protective device available.

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Flammable gas-air mixtures may be formed in empty containers/receptacles.

· **Conditions for safe storage, including any incompatibilities**

· **Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.

Avoid storage near extreme heat, ignition sources or open flame.

Unsuitable material for receptacle: aluminium.

Unsuitable material for receptacle: steel.

Unsuitable material for receptacle: glass or ceramic.

· **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from oxidizing agents.

Store away from metals.

Do not store together with acids.

· **Further information about storage conditions:**

Keep containers tightly sealed.

This product is hygroscopic.

Store in cool, dry conditions in well sealed receptacles.

· **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

67-56-1 Methanol

PEL (USA)	Long-term value: 260 mg/m ³ , 200 ppm
REL (USA)	Short-term value: 325 mg/m ³ , 250 ppm Long-term value: 260 mg/m ³ , 200 ppm Skin
TLV (USA)	Short-term value: 328 mg/m ³ , 250 ppm Long-term value: 262 mg/m ³ , 200 ppm Skin; BEI
EL (Canada)	Short-term value: 250 ppm Long-term value: 200 ppm Skin
EV (Canada)	Short-term value: 325 mg/m ³ , 250 ppm Long-term value: 260 mg/m ³ , 200 ppm Skin
LMPE (Mexico)	Short-term value: 250 ppm Long-term value: 200 ppm PIEL, IBE

1310-58-3 Potassium hydroxide

REL (USA)	Ceiling limit value: 2 mg/m ³
TLV (USA)	Ceiling limit value: 2 mg/m ³
EL (Canada)	Ceiling limit value: 2 mg/m ³
EV (Canada)	Ceiling limit value: 2 mg/m ³
LMPE (Mexico)	Ceiling limit value: 2 mg/m ³

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· **Ingredients with biological limit values:**

67-56-1 Methanol

BEI (USA)	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)
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· **Exposure controls**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

· **Engineering controls:** Provide adequate ventilation.

· **Breathing equipment:**

NIOSH or EU approved dust respirator is highly recommended when ventilation is poor.

NIOSH or EN approved organic vapor respirator equipped with a dust/mist prefilter should be used.

· **Protection of hands:**



Protective gloves

· **Material of gloves**

Nitrile rubber, NBR

Neoprene gloves

· **Penetration time of glove material** Maximum time: 60 min.

· **Eye protection:**

Contact lenses should not be worn.



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

· **Body protection:** Alkaline resistant protective clothing

· **Limitation and supervision of exposure into the environment**

No relevant information available.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **Appearance:**

Form: Liquid

Color: Colorless

· **Odor:** Alcohol-like

· **Odor threshold:** Not determined.

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· pH-value (500 g/l) at 20 °C (68 °F):	>12.0
· Melting point/Melting range:	Not determined.
· Boiling point/Boiling range:	Not determined.
· Flash point:	10-15 °C (505 °F)
· Flammability (solid, gaseous):	Not applicable.
· Auto-ignition temperature:	>260 °C (>500 °F)
· Decomposition temperature:	Not determined.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits	
Lower:	5.5 Vol %
Upper:	44 Vol %
· Oxidizing properties:	Non-oxidizing.
· Vapor pressure:	Not determined.
· Density at 20 °C (68 °F):	0.90-0.95 g/cm ³ (7.51-7.93 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	Not determined.
· Evaporation rate:	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Other information	No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**
Reacts violently with oxidizing agents.
Strong exothermic reaction with acids.
Used empty containers may contain product gases which form explosive mixtures with air.
Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.
Highly flammable liquid and vapor.
Attacks materials containing glass and silicate.
Corrosive action on metals.
Toxic fumes may be released if heated above the decomposition point.
- **Conditions to avoid**

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Keep ignition sources away - Do not smoke.
Store away from oxidizing agents.

· **Incompatible materials**

Oxidizing agents.
Metals.
Acids.

· **Hazardous decomposition products**

Under fire conditions only:
Carbon monoxide and carbon dioxide
Toxic metal oxide smoke

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

Toxic in contact with skin.
Toxic if inhaled.
Toxic if swallowed.

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	107 mg/kg
Dermal	LD50	333 mg/kg
Inhalative	LC50/4h	3.33 mg/l

1310-58-3 Potassium hydroxide

Oral	LD50	273 mg/kg (rat)
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· **Primary irritant effect:**

- **On the skin:** Strong caustic effect on skin and mucous membranes.
- **On the eye:** Strong caustic effect.
- **Sensitization:** Based on available data, the classification criteria are not met.

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **NTP (National Toxicology Program):**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

· **Probable route(s) of exposure:**

Ingestion.
Inhalation.
Eye contact.
Skin contact.

· **Acute effects (acute toxicity, irritation and corrosivity):**

Causes severe skin burns and eye damage.
Toxic if swallowed, in contact with skin or if inhaled.
Causes damage to the central nervous system and optic nerve.

· **Repeated dose toxicity:** No relevant information available.

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- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Causes damage to the central nervous system and optic nerve.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Other adverse effects** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- | | |
|---------------------------------------|---|
| · UN-Number | |
| · DOT, ADR/RID/ADN, IMDG, IATA | UN3286 |
| · UN proper shipping name | |
| · DOT, ADR/RID/ADN, IMDG, IATA | FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.
(METHANOL, POTASSIUM HYDROXIDE) |
| · Transport hazard class(es) | |

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· DOT



· Class 3
· Label 3, 6.1, 8

· ADR/RID/ADN



· Class 3 (FTC)
· Label 3, 6.1, 8

· IMDG



· Class 3
· Label 3/6.1/8

· IATA



· Class 3
· Label 3 (6.1, 8)

· Packing group

· DOT, ADR/RID/ADN, IMDG, IATA II

· Environmental hazards

Not applicable.

· Special precautions for user

Warning: Flammable liquids

· Hazard identification number (Kemler code): 336

· EMS Number: F-E,S-C

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

15 Regulatory information

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

· United States (USA)

· SARA

· Section 302 (extremely hazardous substances):

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None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

67-56-1 | Methanol

· **TSCA (Toxic Substances Control Act)**

67-56-1 | Methanol

1310-58-3 | Potassium hydroxide

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

67-56-1 | Methanol

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **Canadian Domestic Substances List (DSL):**

None of the ingredients are listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

OSHA: Occupational Safety & Health Administration

Flam. Liq. 2: Flammable liquids – Category 2

Met. Corr. 1: Corrosive to metals – Category 1

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

· **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

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Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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