

SAFETY DATA SHEET

Version 8.18
Revision Date 08/05/2024
Print Date 08/06/2024

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

1.1 Product identifiers

Product name : Water Standard 0.01 % Reference Material
for Karl Fischer Titration 1 g \pm 0.1 mg H₂O
Aquastar®

Product Number : 1.88050
Catalogue No. : 188050
Brand : Millipore

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

Identified uses : Reagent for analysis
Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-
527-3887 CHEMTREC (International) 24
Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226
Acute toxicity, Inhalation (Category 4), H332

Millipore - 1.88050

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Acute toxicity, Dermal (Category 4), H312
 Skin irritation (Category 2), H315
 Eye irritation (Category 2A), H319
 Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
 Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Central nervous system, Liver, Kidney, H373
 Aspiration hazard (Category 1), H304
 Short-term (acute) aquatic hazard (Category 2), H401
 Long-term (chronic) aquatic hazard (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard Statements

| | |
|-------------|---|
| H226 | Flammable liquid and vapor. |
| H304 | May be fatal if swallowed and enters airways. |
| H312 + H332 | Harmful in contact with skin or if inhaled. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H373 | May cause damage to organs (Central nervous system, Liver, Kidney) through prolonged or repeated exposure if inhaled. |
| H401 | Toxic to aquatic life. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary Statements

| | |
|--------------------|--|
| P210 | Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking. |
| P233 | Keep container tightly closed. |
| 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 dust/ fume/ gas/ mist/ vapors/ spray. |
| P264 | Wash skin thoroughly after handling. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/ eye protection/ face protection. |
| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTER/ doctor. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. |
| P304 + P340 + P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P314 | Get medical advice/ attention if you feel unwell. |
| P331 | Do NOT induce vomiting. |

| | |
|-------------|--|
| P332 + P313 | If skin irritation occurs: Get medical advice/ attention. |
| P337 + P313 | If eye irritation persists: Get medical advice/ attention. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |
| P405 | Store locked up. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.2 Mixtures

| Component | Classification | Concentration |
|---------------------|-----------------------|--|
| Xylene | | |
| CAS-No. | 1330-20-7 | Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; STOT RE 2; Asp. Tox. 1; Aquatic Acute 2; Aquatic Chronic 3; H226, H332, H312, H315, H319, H335, H373, H304, H401, H412 |
| EC-No. | 215-535-7 | |
| Index-No. | 601-022-00-9 | |
| Registration number | 01-2119488216-32-XXXX | |
| | | |
| | | >= 90 - <= 100 % |

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂) Dry powder Foam

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Recommended storage temperature see product label.

Storage class

Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

| Component | CAS-No. | Value | Control parameters | Basis |
|-----------|-----------|---|----------------------------------|---|
| Xylene | 1330-20-7 | PEL | 100 ppm 435 mg/m ³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | C | 300 ppm | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | STEL | 150 ppm 655 mg/m ³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | TWA | 100 ppm 435 mg/m ³ | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | | TWA | 20 ppm | USA. ACGIH Threshold Limit Values (TLV) |
| | Remarks | Ototoxicant Not classifiable as a human carcinogen | | |

Biological occupational exposure limits

| Component | CAS-No. | Parameters | Value | Biological specimen | Basis |
|-----------|-----------|--|-------------------|---------------------|---|
| Xylene | 1330-20-7 | Methylhippuric acids | 0.3g/g creatinine | Urine | ACGIH - Biological Exposure Indices (BEI) |
| | Remarks | End of shift (As soon as possible after exposure ceases) | | | |

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Viton®

Minimum layer thickness: 0.70 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.40 mm

Break through time: 30 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Body Protection

Flame retardant antistatic protective clothing.

Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|--|
| a) Appearance | Form: liquid Color: colorless |
| b) Odor | aromatic |
| c) Odor Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point: -34 °C (-29 °F) - (xylene) |
| f) Initial boiling point and boiling range | 137 °C 279 °F at 1,013 hPa |
| g) Flash point | 25 °C (77 °F) |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 7.5 %(V) Lower explosion limit: 1.7 %(V) |

- | | | |
|----|---|--|
| k) | Vapor pressure | 10 hPa at 20 °C (68 °F) |
| l) | Vapor density | 3.7 |
| m) | Density | 0.86 g/mL at 20 °C (68 °F) |
| | Relative density | No data available |
| n) | Water solubility | 0.2 g/l at 20 °C (68 °F) |
| o) | Partition coefficient: n-octanol/water | No data available |
| p) | Autoignition temperature | No data available |
| q) | Decomposition temperature | Distillable in an undecomposed state at normal pressure. |
| r) | Viscosity | No data available |
| s) | Explosive properties | Not classified as explosive. |
| t) | Oxidizing properties | none |

9.2 Other safety information

| | |
|---------------------------|-----|
| Relative vapor density | 3.7 |
|---------------------------|-----|

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents
conc. sulfuric acid
sulfur

Risk of explosion with:

Nitric acid
uranium hexafluoride

10.4 Conditions to avoid

Heating.

10.5 Incompatible materials

Rubber, various plastics, Light metals

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Symptoms: Possible symptoms: , mucosal irritations, Cough, Shortness of breath, Possible damages: , damage of respiratory tract

Dermal: No data available

Skin corrosion/irritation

Remarks: Mixture causes skin irritation.

Serious eye damage/eye irritation

Remarks: Mixture causes serious eye irritation.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Mixture may cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Mixture may cause damage to organs through prolonged or repeated exposure.

- Central nervous system, Liver, Kidney

Aspiration hazard

Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.

11.2 Additional Information

No data available

Components

Xylene

Acute toxicity

LD50 Oral - Rat - male - 3,523 mg/kg

(EC Directive 92/69/EEC B.1 Acute Toxicity (Oral))

Remarks: (ECHA)

LC50 Inhalation - Rat - male - 4 h - 29.09 mg/l - vapor
(Regulation (EC) No. 440/2008, Annex, B.2)
Remarks: (Regulation (EC) No 1272/2008, Annex VI)
LD50 Dermal - Rabbit - > 1,700 mg/kg
Remarks: (RTECS)
No data available

Skin corrosion/irritation

Skin - Rabbit
Result: Moderate skin irritation - 24 h
Remarks: (IUCLID)
Remarks: Drying-out effect resulting in rough and chapped skin.
After long-term exposure to the chemical:
Dermatitis

Serious eye damage/eye irritation

Eyes - Rabbit
Result: Causes serious eye irritation. - 24 h
Remarks: (RTECS)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse
Result: negative
(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Chinese hamster ovary cells
Result: negative
Remarks: (National Toxicology Program)
Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative
Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Result: negative
Method: OECD Test Guideline 478
Species: Mouse - male and female
Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation. - Respiratory system

Specific target organ toxicity - repeated exposure

Inhalation - May cause damage to organs through prolonged or repeated exposure.
- Central nervous system, Liver, Kidney

Aspiration hazard

May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1 Toxicity

Mixture

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Discharge into the environment must be avoided.

Components

Xylene

| | |
|---|--|
| Toxicity to fish | static test LC50 - Oncorhynchus mykiss (rainbow trout) - 2.60 mg/l - 96 h (OECD Test Guideline 203) |
| Toxicity to algae | static test EC50 - Pseudokirchneriella subcapitata - 4.36 mg/l - 73 h (OECD Test Guideline 201) |
| Toxicity to bacteria | Remarks: (ECHA) |
| Toxicity to fish(Chronic toxicity) | flow-through test NOEC - Oncorhynchus mykiss (rainbow trout) - > 1.3 mg/l - 56 d Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) | NOEC - Ceriodaphnia dubia (water flea) - 0.96 mg/l - 7 d (US-EPA) |

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information**DOT (US)**

UN number: 1307 Class: 3 Packing group: III
Proper shipping name: XylenesSOLUTION

Reportable Quantity (RQ): 100 lbs
Reportable Quantity (RQ): 100 lbs
Poison Inhalation Hazard: No

IMDG

UN number: 1307 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: XYLENESSOLUTION

IATA

UN number: 1307 Class: 3 Packing group: III
Proper shipping name: XylenesSOLUTION

SECTION 15: Regulatory information**CERCLA Reportable Quantity**

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|------------|-----------|--------------------|-----------------------------|
| Xylene | 1330-20-7 | 100 | 100 |
| Xylene | 1330-20-7 | 100 | 100 (F003) |

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 313

: The following components are subject to reporting levels established by SARA Title III, Section 313:

Xylene 1330-20-7 >= 90 - <= 100 %

US State Regulations

Massachusetts Right To Know

Xylene 1330-20-7

Pennsylvania Right To Know

Xylene 1330-20-7

Maine Chemicals of High Concern

water 7732-18-5

Vermont Chemicals of High Concern

water 7732-18-5

Washington Chemicals of High Concern

water 7732-18-5

The ingredients of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16: Other information

Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Version: 8.18

Revision Date: 08/05/2024

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