

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 1 of 10

Revision date: 08.29.2016

Hardness Buffer Solution

SECTION 1: Identification

Product identifier

Product name: Hardness Buffer Solution

Product code: ANDHA7405-B

Recommended use of the product and restriction on use

Relevant identified uses: Not determined or not applicable.

Uses advised against: Not determined or not applicable.

Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Manufacturer:

AquaPhoenix Scientific
860 Gitts Run Road
Hanover
PA 17331
(717) 632-1291

Supplier:

Anderson Chemical Company
325 South Davis Avenue
Litchfield
MN 55355
(320) 693-2477

Emergency telephone number:

United States

Emergency Telephone No.: (800) 255-3924

SECTION 2: Hazard(s) identification

GHS classification:

Skin corrosion, category 1A

Serious eye damage, category 1

Acute aquatic hazard, category 1

Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements:

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H400 Very toxic to aquatic life.

Precautionary statements:

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

P321 Specific treatment (see supplemental first aid instructions on this label).

P363 Wash contaminated clothing before reuse.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 2 of 10

Revision date: 08.29.2016

Hardness Buffer Solution

P304+P340+P310 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

P301+P330+P331+P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

P303+P361+P353+P310 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.

P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

P391 Collect spillage.

P405 Store locked up.

P501 Dispose of contents and container as instructed in Section 13.

Hazards not otherwise classified: None

SECTION 3: Composition/information on ingredients

| Identification | Name | Weight % |
|---------------------------|---------------------------------------|----------|
| CAS number: 1336-21-6 | Ammonium Hydroxide | 35-75 |
| CAS number: 12125-02-9 | Ammonium Chloride | <10 |
| CAS number: 7732-18-5 | Water | 40-90 |
| CAS number: 6381-92-6 | EDTA Disodium Salt Dihydrate | <5 |
| CAS number: 12135-76-1 | Ammonium Sulfide | <5 |
| CAS number: 29932-54-5 | EDTA, Disodium, Mg salt, tetrahydrate | <5 |

Additional Information: None

SECTION 4: First aid measures

Description of first aid measures

General notes:

Not determined or not applicable.

After inhalation:

Move exposed individual to fresh air

Loosen clothing as necessary and position individual in a comfortable position

Maintain an unobstructed airway

Immediately call a POISON CONTROL CENTER or seek medical attention

After skin contact:

Immediately remove all contaminated clothing

Wash affected area with soap and water

Immediately call a POISON CONTROL CENTER or seek medical attention

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes

Remove contact lens(es) if able to do so during rinsing

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 3 of 10

Revision date: 08.29.2016

Hardness Buffer Solution

Immediately call a POISON CONTROL CENTER or seek medical attention

After swallowing:

Immediately call a POISON CONTROL CENTER or seek medical attention

Do not induce vomiting

Rinse mouth and then drink plenty of water

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Not determined or not applicable.

Delayed symptoms and effects:

Not determined or not applicable.

Immediate medical attention and special treatment

Specific treatment:

Not determined or not applicable.

Notes for the doctor:

Not determined or not applicable.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition

Unsuitable extinguishing media:

Not determined or not applicable.

Specific hazards during fire-fighting:

Thermal decomposition can lead to release of irritating gases and vapors

Special protective equipment for firefighters:

Wear protective eye wear, gloves and clothing

Refer to Section 8

Use typical firefighting equipment, self-contained breathing apparatus, special tightly sealed suit

Special precautions:

Heating causes a rise in pressure, risk of bursting and combustion

Shut off sources of ignition

Carbon monoxide and carbon dioxide may form upon combustion

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation

Ensure air handling systems are operational

Wear protective eye wear, gloves and clothing

Environmental precautions:

Should not be released into the environment

Prevent from reaching drains, sewer or waterway

Methods and material for containment and cleaning up:

Absorb with non-combustible liquid-binding material (sand, diatomaceous earth (clay), acid binders, universal binders)

Dispose of contents / container in accordance with local regulations

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 4 of 10

Revision date: 08.29.2016

Hardness Buffer Solution

Reference to other sections:

Not determined or not applicable.

SECTION 7: Handling and storage

Precautions for safe handling:

Do not eat, drink, smoke or use personal products when handling chemical substances.

Avoid breathing mist or vapor.

Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities:

Store in a cool, well-ventilated area.

Store away from foodstuffs.

SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

Occupational Exposure limit values:

| Country (Legal Basis) | Substance | Identifier | Permissible concentration |
|-----------------------|--------------------|------------|--|
| ACGIH | Ammonium Chloride | 12125-02-9 | ACGIH TLV: 10 mg/m ³ |
| | Ammonium Hydroxide | 1336-21-6 | ACGIH TLV TWA 25 ppm (NH ₃) |
| | Ammonium Hydroxide | 1336-21-6 | ACGIH TLV STEL 35 ppm (NH ₃) |
| | Ammonium Chloride | 12125-02-9 | ACGIH TLV TWA 10.0 mg/m ³ |
| | Ammonium Chloride | 12125-02-9 | ACGIH TLV STEL 20.0 mg/m ³ |
| NIOSH | Ammonium Chloride | 12125-02-9 | NIOSH REL TWA 10.0 mg/m ³ |
| | Ammonium Chloride | 12125-02-9 | NIOSH REL ST 20.0 mg/m ³ |
| | Ammonium Hydroxide | 1336-21-6 | NIOSH REL TWA 25 ppm (NH ₃) |
| | Ammonium Hydroxide | 1336-21-6 | NIOSH REL TWA 18 mg/m ³ (NH ₃) |
| | Ammonium Hydroxide | 1336-21-6 | NIOSH REL ST 35 ppm (NH ₃) |
| | Ammonium Hydroxide | 1336-21-6 | NIOSH REL ST 27 mg/m ³ (NH ₃) |
| United States (OSHA) | Ammonium Hydroxide | 1336-21-6 | OSHA PEL TWA 50 ppm (NH ₃) |
| | Ammonium Hydroxide | 1336-21-6 | OSHA PEL TWA 35 mg/m ³ (NH ₃) |
| | Ammonium Hydroxide | 1336-21-6 | ACGIH TLV: 17 mg/m ³ , OSHA PEL: 35 mg/m ³ . |

Biological limit values:

No biological exposure limits noted for the ingredient(s).

Information on monitoring procedures:

Not determined or not applicable.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Personal protection equipment

Eye and face protection:

Safety goggles or glasses, or appropriate eye protection.

Skin and body protection:

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 5 of 10

Revision date: 08.29.2016

Hardness Buffer Solution

Select glove material impermeable and resistant to the substance.

Respiratory protection:

When necessary, use NIOSH-approved breathing equipment.

General hygienic measures:

Wash hands before breaks and at the end of work.

Avoid contact with skin, eyes and clothing.

Perform routine housekeeping.

Wash contaminated clothing before reusing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

| | |
|---|----------------------------------|
| Appearance | Clear, colorless liquid |
| Odor | Not available |
| Odor threshold | Not available |
| pH | Not available |
| Melting point/freezing point | Not available |
| Initial boiling point/range | Not available |
| Flash point (closed cup) | Not available |
| Evaporation rate | Not available |
| Flammability (solid, gas) | Not available |
| Upper flammability/explosive limit | Not available |
| Lower flammability/explosive limit | Not available |
| Vapor pressure | Not available |
| Vapor density | Not available |
| Density | Not available |
| Relative density | Not available |
| Solubilities | Not determined or not available. |
| Partition coefficient (n-octanol/water) | Not available |
| Auto/Self-ignition temperature | Not available |
| Decomposition temperature | Not available |
| Dynamic viscosity | Not available |
| Kinematic viscosity | Not available |
| Explosive properties | Not determined or not available. |
| Oxidizing properties | Not determined or not available. |

Other information

SECTION 10: Stability and reactivity

Reactivity:

Does not react under normal conditions of use and storage.

Chemical stability:

Stable under normal conditions of use and storage.

Possibility of hazardous reactions:

None under normal conditions of use and storage.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 6 of 10

Revision date: 08.29.2016

Hardness Buffer Solution

Conditions to avoid:

None known.

Incompatible materials:

None known.

Hazardous decomposition products:

None known.

SECTION 11: Toxicological information

Acute toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

| Name | Route | Result |
|------------------------------|-------|------------------------------|
| Ammonium Chloride | oral | LD50 Rat - |
| | | LD50 - Mouse: 1300 mg/kg |
| Ammonium Hydroxide | oral | LD50 - Rat - 350 mg/kg |
| EDTA Disodium Salt Dihydrate | oral | LD50 Oral - Rat - 3700 mg/kg |

Skin corrosion/irritation

Assessment: Causes severe skin burns and eye damage

Product data: No data available.

Substance data:

| Name | Result |
|--------------------|--|
| Ammonium Sulfide | Causes skin damage |
| Ammonium Hydroxide | Causes severe skin burns and eye damage. |

Serious eye damage/irritation

Assessment: Causes serious eye damage

Product data: No data available.

Substance data:

| Name | Result |
|-------------------|--------------------------------|
| Ammonium Sulfide | Causes serious eye damage |
| Ammonium Chloride | Causes serious eye irritation. |

Respiratory or skin sensitization

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC): None of the ingredients are listed.

National Toxicology Program (NTP): None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 7 of 10

Revision date: 08.29.2016

Hardness Buffer Solution

Product data: No data available.

Substance data: No data available.

Reproductive toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (single exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Information on likely routes of exposure: No data available.

Symptoms related to the physical, chemical and toxicological characteristics: No data available.

Other information: No data available.

SECTION 12: Ecological information

Acute (short-term) toxicity

Assessment: Very toxic to aquatic life

Product data: No data available.

Substance data:

| Name | Result |
|--------------------|---------------------------------------|
| Ammonium Hydroxide | LC50 - Coho salmon - 0.45 mg/L - 96 h |

Chronic (long-term) toxicity

Product data: No data available.

Substance data: No data available.

Persistence and degradability

Product data: No data available.

Substance data: No data available.

Bioaccumulative potential

Product data: No data available.

Substance data: No data available.

Mobility in soil

Product data: No data available.

Substance data: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal methods:

It is the responsibility of the waste generator to properly characterize all waste materials according to

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 8 of 10



Revision date: 08.29.2016

Hardness Buffer Solution



applicable regulatory entities

SECTION 14: Transport information



United States Transportation of dangerous goods (49 CFR DOT)

| | |
|-------------------------------|---|
| UN number | UN 2672 |
| UN proper shipping name | Ammonia Solution. Marine Pollutant (Ammonium hydroxide) |
| UN transport hazard class(es) | 8   |
| Packing group | III |
| Environmental hazards | Marine Pollutant |
| Special precautions for user | None |

International Maritime Dangerous Goods (IMDG)

| | |
|-------------------------------|---|
| UN number | UN 2672 |
| UN proper shipping name | Ammonia Solution. Marine Pollutant (Ammonium hydroxide) |
| UN transport hazard class(es) | 8   |
| Packing group | III |
| Environmental hazards | Marine Pollutant |
| Special precautions for user | None |

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

| | |
|-------------------------------|---|
| UN number | UN 2672 |
| UN proper shipping name | Ammonia Solution. Marine Pollutant (Ammonium hydroxide) |
| UN transport hazard class(es) | 8   |
| Packing group | III |
| Environmental hazards | Marine Pollutant |
| Special precautions for user | None |

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

| | |
|--------------------|------|
| Bulk Name | None |
| Ship type | None |
| Pollution category | None |

SECTION 15: Regulatory information

United States regulations

Inventory listing (TSCA):

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 9 of 10

Revision date: 08.29.2016

Hardness Buffer Solution

| | | |
|------------|---------------------------------------|------------|
| 7732-18-5 | Water | Listed |
| 12135-76-1 | Ammonium Sulfide | Listed |
| 6381-92-6 | EDTA Disodium Salt Dihydrate | Not Listed |
| 29932-54-5 | EDTA, Disodium, Mg salt, tetrahydrate | Not Listed |
| 12125-02-9 | Ammonium Chloride | Listed |
| 1336-21-6 | Ammonium Hydroxide | Listed |
| 1336-21-6 | Ammonium Hydroxide | Listed |

Significant New Use Rule (TSCA Section 5): Not determined.

Export notification under TSCA Section 12(b): Not determined.

SARA Section 311/312 hazards:

| | | | | |
|-------|---------|------|----------|----------|
| Acute | Chronic | Fire | Pressure | Reactive |
| No | No | No | No | No |

SARA Section 302 extremely hazardous substances: Not determined.

SARA Section 313 toxic chemicals:

| | | |
|-----------|--------------------|--------|
| 1336-21-6 | Ammonium Hydroxide | Listed |
|-----------|--------------------|--------|

CERCLA:

| | | | |
|------------|--------------------|--------|------|
| 12125-02-9 | Ammonium Chloride | Listed | 5000 |
| 1336-21-6 | Ammonium Hydroxide | Listed | 1000 |
| 12135-76-1 | Ammonium Sulfide | Listed | 100 |

RCRA: Not determined.

Section 112(r) of the Clean Air Act (CAA): Not determined.

Massachusetts Right to Know:

| | | |
|------------|------------------------------|------------|
| 12125-02-9 | Ammonium Chloride | Not Listed |
| 12135-76-1 | Ammonium Sulfide | Not Listed |
| 1336-21-6 | Ammonium Hydroxide | Listed |
| 29932-54-5 | EDTA Disodium Salt Dihydrate | Not Listed |
| 6381-92-6 | EDTA Disodium Salt Dihydrate | Not Listed |
| 7732-18-5 | Water | Not Listed |

New Jersey Right to Know:

| | | |
|------------|------------------------------|------------|
| 12125-02-9 | Ammonium Chloride | Not Listed |
| 12135-76-1 | Ammonium Sulfide | Not Listed |
| 1336-21-6 | Ammonium Hydroxide | Not Listed |
| 29932-54-5 | EDTA Disodium Salt Dihydrate | Not Listed |
| 6381-92-6 | EDTA Disodium Salt Dihydrate | Not Listed |

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 08.28.2016

Page 10 of 10

Revision date: 08.29.2016

Hardness Buffer Solution

| | | |
|-----------|-------|------------|
| 7732-18-5 | Water | Not Listed |
|-----------|-------|------------|

New York Right to Know:

| | | |
|------------|------------------------------|------------|
| 12125-02-9 | Ammonium Chloride | Not Listed |
| 12135-76-1 | Ammonium Sulfide | Not Listed |
| 1336-21-6 | Ammonium Hydroxide | Listed |
| 29932-54-5 | EDTA Disodium Salt Dihydrate | Not Listed |
| 6381-92-6 | EDTA Disodium Salt Dihydrate | Not Listed |
| 7732-18-5 | Water | Not Listed |

Pennsylvania Right to Know:

| | | |
|------------|------------------------------|------------|
| 12125-02-9 | Ammonium Chloride | Not Listed |
| 12135-76-1 | Ammonium Sulfide | Listed |
| 1336-21-6 | Ammonium Hydroxide | Listed |
| 29932-54-5 | EDTA Disodium Salt Dihydrate | Not Listed |
| 6381-92-6 | EDTA Disodium Salt Dihydrate | Not Listed |
| 7732-18-5 | Water | Not Listed |

California Proposition 65: Not determined.

SECTION 16: Other information

Abbreviations and Acronyms: None

Disclaimer:

This product has been classified in accordance with hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

NFPA: 3-0-0

HMIS: 3-0-0

Initial preparation date: 08.28.2016

Revision date: 08.29.2016

End of Safety Data Sheet