

# Safety Data Sheet

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

Revision: June 04, 2020

## 1 Identification

- **Product identifier**
- **Trade name: Hardness Buffer Solution**
- **Product code:** HA7405SS
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **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**
- Met. Corr.1 H290 May be corrosive to metals.
- Skin Corr. 1C H314 Causes severe skin burns and eye damage.
- Eye Dam. 1 H318 Causes serious eye damage.
- STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS05 GHS07

- **Signal word:** Danger

- **Hazard statements:**

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

- **Precautionary statements:**

P234 Keep only in original container.

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P260 Do not breathe mist/vapors/spray.  
 P264 Wash thoroughly after handling.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves/protective clothing/eye 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.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a poison center/doctor.  
 P363 Wash contaminated clothing before reuse.  
 P390 Absorb spillage to prevent material damage.  
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
 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:**

7732-18-5	Water	>80%
1336-21-6	ammonia  Met. Corr. 1, H290; Skin Corr. 1B, H314; Eye Dam. 1, H318  STOT SE 3, H335	5-10%
12125-02-9	ammonium chloride  Acute Tox. 4, H302; Eye Irrit. 2A, H319	1-5%
14402-88-1	Disodium [[N,N'-ethylenebis[N-(carboxymethyl)glycinato]](4-)-N,N',O,O',ON,ON'] magnesate(2-)  Skin Irrit. 2, H315  Eye Irrit. 2B, H320	<1%
12135-76-1	ammonium sulphide  Skin Corr. 1B, H314; Eye Dam. 1, H318	<1%

· **Additional information:**

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**

· **After inhalation:**

Supply fresh air.  
 Provide oxygen treatment if affected person has difficulty breathing.  
 Seek medical help for symptoms or if unconscious.

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- **After skin contact:**  
Immediately remove any clothing soiled by the product.  
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:**  
Dizziness  
Coughing  
Strong irritant with the danger of severe eye injury.  
Caustic effect on skin and mucous membranes.  
May cause respiratory irritation.  
Gastric or intestinal disorders when ingested.  
Nausea in case of ingestion.  
Breathing difficulty
- **Danger:**  
Danger of impaired breathing.  
Danger of gastric perforation.  
May cause drowsiness or dizziness.
- **Indication of any immediate medical attention and special treatment needed:**  
Later observation for pneumonia and pulmonary edema.  
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:**  
The product is not flammable.  
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** No relevant information available.
- **Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.

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For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.  
Ensure adequate ventilation.

· **Environmental precautions**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Methods and material for containment and cleaning up**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
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:**

Prevent formation of aerosols.  
Avoid splashes or spray in enclosed areas.  
Use only in well ventilated areas.

· **Information about protection against explosions and fires:** No special measures required.

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

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

Store only in the original receptacle.  
Unsuitable material for receptacle: aluminium.

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

Store away from foodstuffs.  
Do not store together with acids.  
Store away from oxidizing agents.  
Store away from metals.

· **Further information about storage conditions:** Keep containers tightly sealed.

· **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:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

**12125-02-9 ammonium chloride**

REL (USA)	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>
TLV (USA)	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>
EL (Canada)	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>

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EV (Canada)	fume Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>
LMPE (Mexico)	fume Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>

## · 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.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

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

· **Breathing equipment:** Use suitable respiratory protective device when high concentrations are present.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

### · Material of gloves

Nitrile rubber, NBR

Natural rubber, NR

### · Eye protection:



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

· **Body protection:** Protective work clothing

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

No relevant information available.

· **Risk management measures** No relevant information available.

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · Appearance:

Form: Liquid

Color: Colorless

· **Odor:** Ammonia-like

· **Odor threshold:** Not determined.

· **pH-value:** Alkaline

· **Melting point/Melting range:** <0 °C (<32 °F)

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· <b>Boiling point/Boiling range:</b>	>100 °C (>212 °F)
· <b>Flash point:</b>	The product is not flammable.
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Auto-ignition temperature:</b>	Not determined.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits</b>	
Lower:	Not determined.
Upper:	Not determined.
· <b>Oxidizing properties:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17.3 mm Hg)
· <b>Density:</b>	
Relative density:	Not determined.
Vapor density:	Not determined.
Evaporation rate:	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Easily soluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Other information</b>	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**  
Corrodes aluminium.  
Strong exothermic reaction with acids.  
Reacts with strong oxidizing agents.  
Toxic fumes may be released if heated above the decomposition point.
- **Conditions to avoid** No relevant information available.
- **Incompatible materials** No relevant information available.
- **Hazardous decomposition products**  
Under fire conditions only:  
Chlorine compounds  
Nitrogen oxides (NO<sub>x</sub>)

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## 11 Toxicological information

### · Information on toxicological effects

· **Acute toxicity:** Based on available data, the classification criteria are not met.

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

**12125-02-9 ammonium chloride**

Oral	LD50	1650 mg/kg (rat)
------	------	------------------

### · Primary irritant effect:

· **On the skin:** Caustic effect on skin and mucous membranes.

· **On the eye:** Strong irritant with the danger of severe eye injury.

· **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.

· **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:

May cause respiratory irritation.

May cause drowsiness or dizziness.

· **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 undiluted product or large quantities of it to reach ground water, water course or sewage system.

Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

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· **Other adverse effects** No relevant information available.

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## 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.

· **Uncleaned packagings**

· **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

· **UN-Number**

· DOT, ADR/RID/ADN, IMDG, IATA UN2672

· **UN proper shipping name**

· DOT, IATA Ammonia solution  
· ADR/RID/ADN, IMDG AMMONIA SOLUTION

· **Transport hazard class(es)**

· DOT



· Class 8  
· Label 8

· ADR/RID/ADN



· Class 8 (C5)  
· Label 8

· IMDG, IATA



· Class 8  
· Label 8

· **Packing group**

· DOT, ADR/RID/ADN, IMDG, IATA III

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- |  |                               |
|--|-------------------------------|
| · <b>Environmental hazards</b>   |                               |
| · <b>Marine pollutant:</b>   | No                            |
| · <b>Special precautions for user</b>  | Warning: Corrosive substances |
| · <b>Hazard identification number (Kemler code):</b>                             | 80                            |
| · <b>EMS Number:</b>   | F-A,S-B                       |
| · <b>Segregation groups</b>  | Alkalis                       |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> |                               |
|  | 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):

None of the ingredients are listed.

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

1336-21-6 ammonia

### · TSCA (Toxic Substances Control Act)

All ingredients are listed or exempt.

### · 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:

None of the ingredients are listed.

#### · 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):

All ingredients listed on DSL or NDSL.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any  
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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

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

Acute Tox. 4: Acute toxicity – Category 4

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

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

Skin Irrit. 2: Skin corrosion/irritation – Category 2

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

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

**Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

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., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

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Website: [www.chemtel.com](http://www.chemtel.com)

# Safety Data Sheet

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

Revision: July 09, 2020

## 1 Identification

- **Product identifier**
- **Trade name:** Hardness Titrant, High
- **Product code:** ED2070SS
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **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**  
STOT RE 2 H373 May cause damage to the respiratory tract through prolonged or repeated exposure.  
Route of exposure: Inhalation.

- 
- **Label elements**
  - **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms:**



GHS08

- **Signal word:** Warning
  - **Hazard statements:**  
H373 May cause damage to the respiratory tract through prolonged or repeated exposure. Route of exposure: Inhalation.
  - **Precautionary statements:**  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P314 Get medical advice/attention if you feel unwell.  
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.

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Trade name: Hardness Titrant, High

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## 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

139-33-3	Disodium dihydrogenethylenediaminetetraacetate  STOT RE 2, H373  Acute Tox. 4, H332	<6%
1310-73-2	Sodium hydroxide  Met. Corr. 1, H290; Skin Corr. 1A, H314; Eye Dam. 1, H318	<1%
7786-30-3	magnesium chloride	<1%
7732-18-5	Water	>90%

· **Additional information:**

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:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air.

If experiencing respiratory symptoms: Call a doctor.

· **After skin contact:**

Immediately rinse with water.

If skin irritation is experienced, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, 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:**

Gastric or intestinal disorders when ingested.

· **Indication of any immediate medical attention and special treatment needed:**

If medical advice is needed, have product container or label at hand.

## 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

The product is not flammable.

Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** No relevant information available.

· **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

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- **Advice for firefighters**
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
For large spills, wear protective clothing.  
For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.  
Ensure adequate ventilation.
- **Environmental precautions** No special measures required.
- **Methods and material for containment and cleaning up**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
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:**  
Prevent formation of aerosols.  
Avoid splashes or spray in enclosed areas.  
Use only in well ventilated areas.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:**  
Do not store together with oxidizing and acidic materials.  
Store away from foodstuffs.
- **Further information about storage conditions:** Keep containers tightly sealed.
- **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:**  
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

### 1310-73-2 Sodium hydroxide

PEL (USA)	Long-term value: 2 mg/m <sup>3</sup>
REL (USA)	Ceiling limit value: 2 mg/m <sup>3</sup>

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

- **Exposure controls**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Wash hands before breaks and at the end of work.
- **Engineering controls:** Provide adequate ventilation.
- **Breathing equipment:**  
Not required under normal conditions of use.  
Use suitable respiratory protective device when aerosol or mist is formed.
- **Protection of hands:**



Protective gloves

- **Material of gloves**  
Butyl rubber, BR  
Natural rubber, NR  
Neoprene gloves  
Nitrile rubber, NBR  
Fluorocarbon rubber (Viton)  
Sensibilization by the components in the glove materials is possible.
- **Eye protection:**



Safety glasses

- Follow relevant national guidelines concerning the use of protective eyewear.
- **Body protection:** Protective work 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:** Odorless

· **Odor threshold:** Not determined.

· **pH-value at 20 °C (68 °F):** 8-10

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** 100-105 °C (212-157 °F)

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· <b>Flash point:</b>	The product is not flammable.
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Auto-ignition temperature:</b>	Not determined.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Oxidizing properties:</b>	Not determined.
· <b>Vapor pressure:</b>	Not determined.
· <b>Density at 20 °C (68 °F):</b>	1.01-1.05 g/cm <sup>3</sup> (8.43-8.76 lbs/gal)
· <b>Relative density:</b>	Not determined.
· <b>Vapor density:</b>	Not determined.
· <b>Evaporation rate:</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Other information</b>	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**  
Contact with acids releases toxic gases.  
Exothermic reaction with acids.  
Reacts with strong oxidizing agents.  
Toxic fumes may be released if heated above the decomposition point.
- **Conditions to avoid** No relevant information available.
- **Incompatible materials** No relevant information available.
- **Hazardous decomposition products**  
Under fire conditions only:  
Nitrogen oxides  
Carbon monoxide and carbon dioxide  
Chlorine compounds

(Cont'd. on page 6)

# Safety Data Sheet

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

Revision: July 09, 2020

Trade name: Hardness Titrant, High

(Cont'd. of page 5)

## 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

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

- **ATE (Acute Toxicity Estimate)**

Inhalative	LC50/4h	>27.8 mg/l
------------	---------	------------

- **Primary irritant effect:**

- **On the skin:** Based on available data, the classification criteria are not met.

- **On the eye:** Based on available data, the classification criteria are not met.

- **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):** No relevant information available.

- **Repeated dose toxicity:** Possible risk of irreversible effects.

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

- **STOT-repeated exposure:**

May cause damage to the respiratory tract through prolonged or repeated exposure. Route of exposure: Inhalation.

- **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.

- **Other adverse effects** No relevant information available.

(Cont'd. on page 7)

# Safety Data Sheet

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

Revision: July 09, 2020

Trade name: Hardness Titrant, High

(Cont'd. of page 6)

## 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.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **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 Not regulated.

- **UN proper shipping name**

- DOT, ADR/RID/ADN, IMDG, IATA Not regulated.

- **Transport hazard class(es)**

- DOT, ADR/RID/ADN, IMDG, IATA

- Class Not regulated.

- **Packing group**

- DOT, ADR/RID/ADN, IMDG, IATA Not regulated.

- **Environmental hazards**

Not applicable.

- **Special precautions for user**

Not applicable.

- **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):**

None of the ingredients are listed.

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

None of the ingredients are listed.

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

139-33-3 | Disodium dihydrogenethylenediaminetetraacetate

(Cont'd. on page 8)

# Safety Data Sheet

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

Revision: July 09, 2020

**Trade name: Hardness Titrant, High**

(Cont'd. of page 7)

7786-30-3	magnesium chloride
1310-73-2	Sodium hydroxide
7732-18-5	Water

· **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:**

None of the ingredients are listed.

· **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

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

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 RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· **Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

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., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

(Cont'd. on page 9)

## Safety Data Sheet

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

Revision: July 09, 2020

**Trade name: Hardness Titrant, High**

(Cont'd. of page 8)

ChemTel  
1305 North Florida Avenue  
Tampa, Florida USA 33602-2902  
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573  
Website: [www.chemtel.com](http://www.chemtel.com)

# Safety Data Sheet

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

Revision: June 05, 2020

## 1 Identification

- **Product identifier**
- **Trade name:** Hardness Indicator Liquid
- **Product code:** HA7430SS
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **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**  
The substance is not classified as hazardous according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements:** Not regulated.
- **Hazard pictograms:** Not regulated.
- **Signal word:** None.
- **Hazard statements:** None.
- **Precautionary statements:** None.
- **Other hazards:** There are no other hazards not otherwise classified that have been identified.

## 3 Composition/information on ingredients

- **Chemical characterization: Substances**

- **Components:**

7732-18-5	Water	>90%
3147-14-6	3-hydroxy-4-(6-hydroxy-m-tolylazo)naphthalene-1-sulphonic acid	<10%

- **Additional information:**

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.

(Cont'd. on page 2)

# Safety Data Sheet

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

Revision: June 05, 2020

**Trade name: Hardness Indicator Liquid**

(Cont'd. of page 1)

## 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Immediately rinse with water.  
If skin irritation is experienced, consult a doctor.
- **After eye contact:**  
Remove contact lenses if worn.  
Rinse opened eye for several minutes under running water. If symptoms persist, 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:**  
Gastric or intestinal disorders when ingested.
- **Indication of any immediate medical attention and special treatment needed:**  
No relevant information available.

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
The product is not flammable.  
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** No relevant information available.
- **Special hazards arising from the substance or mixture**  
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.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Ensure adequate ventilation.  
For large spills, wear protective clothing.
- **Environmental precautions**  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Methods and material for containment and cleaning up**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose of the collected material according to regulations.
- **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.

(Cont'd. on page 3)

# Safety Data Sheet

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

Revision: June 05, 2020

Trade name: Hardness Indicator Liquid

(Cont'd. of page 2)

## 7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
  - Avoid splashes or spray in enclosed areas.
  - Use only in well ventilated areas.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**
  - Store in cool, dry conditions in well sealed receptacles.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:** 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:**
  - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Exposure controls**
- **General protective and hygienic measures:**
  - The usual precautionary measures for handling chemicals should be followed.
  - Keep away from foodstuffs, beverages and feed.
- **Engineering controls:** Provide adequate ventilation.
- **Breathing equipment:** Not required under normal conditions of use.
- **Protection of hands:**
  - Gloves not required under normal conditions of use.
  - Gloves are advised for repeated or prolonged contact.
  - Wear protective gloves to handle contents of damaged or leaking units.
- **Eye protection:** Follow relevant national guidelines concerning the use of protective eyewear.
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment** No special requirements.
- **Risk management measures** No special requirements.

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **Appearance:**

Form:	Liquid
Color:	Light purple.
  - **Odor:** Not determined.
  - **Odor threshold:** Not determined.
- |                              |                 |
|------------------------------|-----------------|
| pH-value:                    | Not determined. |
| Melting point/Melting range: | 0 °C (32 °F)    |

(Cont'd. on page 4)

# Safety Data Sheet

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

Revision: June 05, 2020

Trade name: Hardness Indicator Liquid

(Cont'd. of page 3)

· <b>Boiling point/Boiling range:</b>	100 °C (212 °F)
· <b>Flash point:</b>	The product is not flammable.
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Auto-ignition temperature:</b>	Not determined.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits</b>	
Lower:	Not determined.
Upper:	Not determined.
· <b>Oxidizing properties:</b>	Not determined.
· <b>Vapor pressure:</b>	Not determined.
· <b>Density:</b>	
Relative density:	Not determined.
Vapor density:	Not determined.
Evaporation rate:	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Soluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Other information</b>	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 with strong alkali.  
Reacts with strong oxidizing agents.
- **Conditions to avoid** No relevant information available.
- **Incompatible materials** No relevant information available.
- **Hazardous decomposition products**  
Under fire conditions only:  
Possible in traces.

## 11 Toxicological information

- **Information on toxicological effects**

(Cont'd. on page 5)

# Safety Data Sheet

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

Revision: June 05, 2020

**Trade name: Hardness Indicator Liquid**

(Cont'd. of page 4)

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Based on available data, the classification criteria are not met.
- **On the eye:** Based on available data, the classification criteria are not met.
- **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):** No relevant information available.
- **Repeated dose toxicity:** No relevant information available.
- **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:** Based on available data, the classification criteria are not met.
- **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:** Generally not hazardous for water.
- **Other adverse effects** No relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system. 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.
- **Uncleaned packagings**

(Cont'd. on page 6)

# Safety Data Sheet

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

Revision: June 05, 2020

**Trade name:** Hardness Indicator Liquid

(Cont'd. of page 5)

- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- **UN-Number**  
· DOT, ADR/RID/ADN, IMDG, IATA Not regulated.
- **UN proper shipping name**  
· DOT, ADR/RID/ADN, IMDG, IATA Not regulated.
- **Transport hazard class(es)**  
· DOT, ADR/RID/ADN, IMDG, IATA  
· Class Not regulated.
- **Packing group**  
· DOT, ADR/RID/ADN, IMDG, IATA Not regulated.
- **Environmental hazards** Not applicable.
- **Special precautions for user** Not applicable.
- **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):**

None of the ingredients are listed.

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

None of the ingredients are listed.

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

3147-14-6	3-hydroxy-4-(6-hydroxy-m-tolylazo)naphthalene-1-sulphonic acid
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7732-18-5	Water
-----------	-------

- **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.

(Cont'd. on page 7)

# Safety Data Sheet

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

Revision: June 05, 2020

**Trade name: Hardness Indicator Liquid**

(Cont'd. of page 6)

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

None of the ingredients are listed.

· **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

· **Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

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

SDS Prepared by:

ChemTel

1305 North Florida Avenue

Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: [www.chemtel.com](http://www.chemtel.com)

# Safety Data Sheet

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

Revision: July 09, 2020

## 1 Identification

- **Product identifier**
- **Trade name:** Hardness Titrant, High
- **Product code:** ED2070SS
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **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**  
STOT RE 2 H373 May cause damage to the respiratory tract through prolonged or repeated exposure.  
Route of exposure: Inhalation.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**  
  
GHS08
- **Signal word:** Warning
- **Hazard statements:**  
H373 May cause damage to the respiratory tract through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Precautionary statements:**  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P314 Get medical advice/attention if you feel unwell.  
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.

(Cont'd. on page 2)

# Safety Data Sheet

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

Revision: July 09, 2020

Trade name: Hardness Titrant, High

(Cont'd. of page 1)

## 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

139-33-3	Disodium dihydrogenethylenediaminetetraacetate  STOT RE 2, H373  Acute Tox. 4, H332	<6%
1310-73-2	Sodium hydroxide  Met. Corr. 1, H290; Skin Corr. 1A, H314; Eye Dam. 1, H318	<1%
7786-30-3	magnesium chloride	<1%
7732-18-5	Water	>90%

· **Additional information:**

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:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air.

If experiencing respiratory symptoms: Call a doctor.

· **After skin contact:**

Immediately rinse with water.

If skin irritation is experienced, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, 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:**

Gastric or intestinal disorders when ingested.

· **Indication of any immediate medical attention and special treatment needed:**

If medical advice is needed, have product container or label at hand.

## 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

The product is not flammable.

Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** No relevant information available.

· **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

(Cont'd. on page 3)

# Safety Data Sheet

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

Revision: July 09, 2020

**Trade name: Hardness Titrant, High**

(Cont'd. of page 2)

- **Advice for firefighters**
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
For large spills, wear protective clothing.  
For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.  
Ensure adequate ventilation.
- **Environmental precautions** No special measures required.
- **Methods and material for containment and cleaning up**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
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:**  
Prevent formation of aerosols.  
Avoid splashes or spray in enclosed areas.  
Use only in well ventilated areas.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:**  
Do not store together with oxidizing and acidic materials.  
Store away from foodstuffs.
- **Further information about storage conditions:** Keep containers tightly sealed.
- **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:**  
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

### 1310-73-2 Sodium hydroxide

PEL (USA)	Long-term value: 2 mg/m <sup>3</sup>
REL (USA)	Ceiling limit value: 2 mg/m <sup>3</sup>

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# Safety Data Sheet

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

- **Exposure controls**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Wash hands before breaks and at the end of work.
- **Engineering controls:** Provide adequate ventilation.
- **Breathing equipment:**  
Not required under normal conditions of use.  
Use suitable respiratory protective device when aerosol or mist is formed.
- **Protection of hands:**



Protective gloves

- **Material of gloves**  
Butyl rubber, BR  
Natural rubber, NR  
Neoprene gloves  
Nitrile rubber, NBR  
Fluorocarbon rubber (Viton)  
Sensibilization by the components in the glove materials is possible.
- **Eye protection:**



Safety glasses

- Follow relevant national guidelines concerning the use of protective eyewear.
- **Body protection:** Protective work 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:** Odorless

· **Odor threshold:** Not determined.

· **pH-value at 20 °C (68 °F):** 8-10

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** 100-105 °C (212-157 °F)

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· <b>Flash point:</b>	The product is not flammable.
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Auto-ignition temperature:</b>	Not determined.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Oxidizing properties:</b>	Not determined.
· <b>Vapor pressure:</b>	Not determined.
· <b>Density at 20 °C (68 °F):</b>	1.01-1.05 g/cm <sup>3</sup> (8.43-8.76 lbs/gal)
· <b>Relative density:</b>	Not determined.
· <b>Vapor density:</b>	Not determined.
· <b>Evaporation rate:</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Other information</b>	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**  
Contact with acids releases toxic gases.  
Exothermic reaction with acids.  
Reacts with strong oxidizing agents.  
Toxic fumes may be released if heated above the decomposition point.
- **Conditions to avoid** No relevant information available.
- **Incompatible materials** No relevant information available.
- **Hazardous decomposition products**  
Under fire conditions only:  
Nitrogen oxides  
Carbon monoxide and carbon dioxide  
Chlorine compounds

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# Safety Data Sheet

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## 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

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

**ATE (Acute Toxicity Estimate)**

Inhalative	LC50/4h	>27.8 mg/l
------------	---------	------------

- **Primary irritant effect:**

- **On the skin:** Based on available data, the classification criteria are not met.

- **On the eye:** Based on available data, the classification criteria are not met.

- **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):** No relevant information available.

- **Repeated dose toxicity:** Possible risk of irreversible effects.

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

- **STOT-repeated exposure:**

May cause damage to the respiratory tract through prolonged or repeated exposure. Route of exposure: Inhalation.

- **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.

- **Other adverse effects** No relevant information available.

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# Safety Data Sheet

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

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Trade name: Hardness Titrant, High

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## 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.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **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 Not regulated.

- **UN proper shipping name**

- DOT, ADR/RID/ADN, IMDG, IATA Not regulated.

- **Transport hazard class(es)**

- DOT, ADR/RID/ADN, IMDG, IATA

- Class Not regulated.

- **Packing group**

- DOT, ADR/RID/ADN, IMDG, IATA Not regulated.

- **Environmental hazards**

Not applicable.

- **Special precautions for user**

Not applicable.

- **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):**

None of the ingredients are listed.

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

None of the ingredients are listed.

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

139-33-3 | Disodium dihydrogenethylenediaminetetraacetate

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**Trade name: Hardness Titrant, High**

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7786-30-3	magnesium chloride
1310-73-2	Sodium hydroxide
7732-18-5	Water

· **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:**

None of the ingredients are listed.

· **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

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

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 RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· **Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

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., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

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## Safety Data Sheet

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ChemTel  
1305 North Florida Avenue  
Tampa, Florida USA 33602-2902  
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573  
Website: [www.chemtel.com](http://www.chemtel.com)

# Safety Data Sheet

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

Revision: June 04, 2020

## 1 Identification

- **Product identifier**
- **Trade name:** Calcium Hardness Buffer
- **Product code:** CA1119SS
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **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**  
Met. Corr.1 H290 May be corrosive to metals.  
Skin Corr. 1A H314 Causes severe skin burns and eye damage.  
Eye Dam. 1 H318 Causes serious eye damage.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**  
  
GHS05
- **Signal word:** Danger
- **Hazard statements:**  
H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.
- **Precautionary statements:**  
P234 Keep only in original container.  
P260 Do not breathe mist/vapors/spray.  
P264 Wash thoroughly after handling.

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# Safety Data Sheet

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

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**Trade name: Calcium Hardness Buffer**

(Cont'd. of page 1)

- P280 Wear protective gloves/protective clothing/eye 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.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a poison center/doctor.
- P363 Wash contaminated clothing before reuse.
- P390 Absorb spillage to prevent material damage.
- 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:**

7732-18-5	Water	60-80%
1310-73-2	Sodium hydroxide	20-40%
	Met. Corr. 1, H290; Skin Corr. 1A, H314; Eye Dam. 1, H318	

· **Additional information:**

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**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**

Immediately remove any clothing soiled by the product.

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:**

Strong caustic effect on skin and mucous membranes.

Danger of severe eye injury.

· **Danger:**

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# Safety Data Sheet

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

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**Trade name: Calcium Hardness Buffer**

(Cont'd. of page 2)

Danger of gastric perforation.

Causes serious eye damage.

· **Indication of any immediate medical attention and special treatment needed:**

Medical supervision for at least 48 hours.

If medical advice is needed, have product container or label at hand.

## 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

The product is not flammable.

Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** None.

· **Special hazards arising from the substance or mixture** No relevant information available.

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.

Ensure adequate ventilation.

· **Environmental precautions**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Methods and material for containment and cleaning up**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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 contact with the eyes and skin.

Open and handle receptacle with care.

Avoid splashes or spray in enclosed areas.

Use only in well ventilated areas.

· **Information about protection against explosions and fires:** No special measures required.

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

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# Safety Data Sheet

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

Revision: June 04, 2020

**Trade name: Calcium Hardness Buffer**

(Cont'd. of page 3)

- **Requirements to be met by storerooms and receptacles:**  
 Store only in the original receptacle.  
 Unsuitable material for receptacle: glass or ceramic.  
 Unsuitable material for receptacle: aluminium.  
 Unsuitable material for receptacle: steel.  
 Store in cool, dry conditions in well sealed receptacles.
- **Information about storage in one common storage facility:**  
 Store away from foodstuffs.  
 Do not store together with acids.
- **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:**  
 The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

### 1310-73-2 Sodium hydroxide

PEL (USA)	Long-term value: 2 mg/m <sup>3</sup>
REL (USA)	Ceiling limit value: 2 mg/m <sup>3</sup>
TLV (USA)	Ceiling limit value: 2 mg/m <sup>3</sup>
EL (Canada)	Ceiling limit value: 2 mg/m <sup>3</sup>
EV (Canada)	Ceiling limit value: 2 mg/m <sup>3</sup>
LMPE (Mexico)	Ceiling limit value: 2 mg/m <sup>3</sup>

- **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.  
 Avoid contact with the eyes and skin.
- **Engineering controls:** Provide adequate ventilation.
- **Breathing equipment:** Not required under normal conditions of use.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves**  
 Laminated film gloves.  
 Nitrile rubber, NBR  
 Fluorocarbon rubber (Viton)  
 Natural rubber, NR  
 Neoprene gloves  
 Butyl rubber, BR
- **Not suitable are gloves made of the following materials:** PVA gloves

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# Safety Data Sheet

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

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Trade name: Calcium Hardness Buffer

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· **Eye protection:**



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.
- **Risk management measures** No relevant information available.

## 9 Physical and chemical properties

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

· **Appearance:**

· <b>Form:</b>	Liquid
· <b>Color:</b>	Colorless
· <b>Odor:</b>	Characteristic
· <b>Odor threshold:</b>	Not determined.

· <b>pH-value at 20 °C (68 °F):</b>	>13
· <b>Melting point/Melting range:</b>	Not determined.
· <b>Boiling point/Boiling range:</b>	>100 °C (>212 °F)

· **Flash point:** The product is not flammable.

· **Flammability (solid, gaseous):** Not applicable.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits**

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

· **Oxidizing properties:** Not determined.

· **Vapor pressure:** Not determined.

· **Density:**

· <b>Relative density:</b>	1.2-1.3
· <b>Vapor density:</b>	Not determined.
· <b>Evaporation rate:</b>	Not determined.

· **Solubility in / Miscibility with**

· **Water:** Fully miscible.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity**

· <b>Dynamic:</b>	Not determined.
· <b>Kinematic:</b>	Not determined.

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# Safety Data Sheet

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

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**Trade name: Calcium Hardness Buffer**

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**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**  
Strong exothermic reaction with acids.  
Corrosive action on metals.  
Attacks materials containing glass and silicate.
- **Conditions to avoid** Avoid acids.
- **Incompatible materials** Strong acids
- **Hazardous decomposition products** No relevant information available.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values that are relevant for classification:** None.
- **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.

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

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Trade name: Calcium Hardness Buffer

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## 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:**  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
- **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.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |   |                           |
|---|---------------------------|
| · <b>UN-Number</b>  |                           |
| · <b>DOT, ADR/RID/ADN, IMDG, IATA</b>   | UN1824                    |
| · <b>UN proper shipping name</b>  |                           |
| · <b>DOT, IATA</b>  | Sodium hydroxide solution |
| · <b>ADR/RID/ADN, IMDG</b>  | SODIUM HYDROXIDE SOLUTION |
| · <b>Transport hazard class(es)</b>   |                           |
| · <b>DOT</b>  |                           |
|  |                           |
| · <b>Class</b>  | 8                         |
| · <b>Label</b>  | 8                         |

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# Safety Data Sheet

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Trade name: Calcium Hardness Buffer

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· **ADR/RID/ADN**



· **Class** 8 (C5)  
 · **Label** 8

· **IMDG, IATA**



· **Class** 8  
 · **Label** 8

· **Packing group**

· **DOT, ADR/RID/ADN, IMDG, IATA** II

· **Environmental hazards**

· **Marine pollutant:** No

· **Special precautions for user**

Warning: Corrosive substances

· **Hazard identification number (Kemler code):** 80

· **EMS Number:** F-A,S-B

· **Segregation groups** Alkalis

· **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):**

None of the ingredients are listed.

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

None of the ingredients are listed.

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

1310-73-2 Sodium hydroxide

7732-18-5 Water

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

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# Safety Data Sheet

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Revision: June 04, 2020

**Trade name: Calcium Hardness Buffer**

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· **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:**

None of the ingredients are listed.

· **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

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

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

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

· **Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

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., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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# Safety Data Sheet

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

Revision: June 05, 2020

## 1 Identification

- **Product identifier**
- **Trade name:** Calcium Hardness Indicator Powder
- **Product code:** CA1100SS
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **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**  
The product is not classified as hazardous according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements:** Not regulated.
- **Hazard pictograms:** Not regulated.
- **Signal word:** Not regulated.
- **Hazard statements:** Not regulated.
- **Precautionary statements:** Not regulated.
- **Other hazards:** There are no other hazards not otherwise classified that have been identified.

## 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures

- **Components:**

7647-14-5	Sodium chloride	>90%
2538-85-4	sodium 3-hydroxy-4-(2-hydroxy-1-naphthylazo)-1-naphthalenesulphonate	<10%
	⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	

- **Additional information:**

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.

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**Trade name: Calcium Hardness Indicator Powder**

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## 4 First-aid measures

**Description of first aid measures****After inhalation:** Supply fresh air; consult doctor in case of complaints.**After skin contact:**

Brush off loose particles from skin.

Clean with water and soap.

Seek medical treatment in case of complaints.

**After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, 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:**

Slight irritant effect on eyes.

Slight irritant effect on skin and mucous membranes.

May cause gastro-intestinal irritation if ingested.

Nausea in case of ingestion.

**Indication of any immediate medical attention and special treatment needed:** Treat symptomatically.

## 5 Fire-fighting measures

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

The product is not flammable.

Use fire fighting measures that suit the environment.

**For safety reasons unsuitable extinguishing agents:** None.**Special hazards arising from the substance or mixture**

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.

## 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

Avoid breathing dust.

Use personal protective equipment as required.

**Environmental precautions**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**Methods and material for containment and cleaning up**

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

**Reference to other sections**

(Cont'd. on page 3)

# Safety Data Sheet

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**Trade name: Calcium Hardness Indicator Powder**

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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:**  
Use only in well ventilated areas.  
Avoid breathing dust.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**  
Storage area should be dry and well-ventilated.  
Store in cool, dry conditions in well sealed receptacles.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **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:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Exposure controls**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid close or long term contact with the skin.  
Avoid breathing dust.
- **Engineering controls:** Provide adequate ventilation.
- **Breathing equipment:** Not required under normal conditions of use.
- **Protection of hands:**  
Gloves are advised for repeated or prolonged contact.  
Wear protective gloves to handle contents of damaged or leaking units.
- **Material of gloves** Rubber gloves
- **Eye protection:**



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

- **Body protection:** Protection may be required for spills.
- **Limitation and supervision of exposure into the environment**

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**Trade name: Calcium Hardness Indicator Powder**

No relevant information available.

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· **Risk management measures** No relevant information available.

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · Appearance:

· **Form:** Powder

· **Color:** White

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** Not determined.

· **Flash point:** The product is not flammable.

· **Flammability (solid, gaseous):** Not determined.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

#### · Explosion limits

· **Lower:** Not determined.

· **Upper:** Not determined.

· **Oxidizing properties:** Non-oxidizing.

· **Vapor pressure:** Not determined.

#### · Density:

· **Relative density:** Not determined.

· **Vapor density:** Not applicable.

· **Evaporation rate:** Not applicable.

#### · Solubility in / Miscibility with

· **Water:** Soluble.

· **Partition coefficient (n-octanol/water):** Not determined.

#### · Viscosity

· **Dynamic:** Not applicable.

· **Kinematic:** Not applicable.

· **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:**

(Cont'd. on page 5)

# Safety Data Sheet

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**Trade name: Calcium Hardness Indicator Powder**

(Cont'd. of page 4)

No decomposition if used and stored according to specifications.

- **Possibility of hazardous reactions**

Toxic fumes may be released if heated above the decomposition point.

Reacts with strong acids.

- **Conditions to avoid** Moisture.

- **Incompatible materials** Strong acids

- **Hazardous decomposition products**

Under fire conditions only:

Chlorine compounds

Sulfur oxides (SO<sub>x</sub>)

## 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:** Based on available data, the classification criteria are not met.

- **LD/LC50 values that are relevant for classification:** None.

- **Primary irritant effect:**

- **On the skin:** Based on available data, the classification criteria are not met.

- **On the eye:** Based on available data, the classification criteria are not met.

- **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.

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

- **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**

(Cont'd. on page 6)

# Safety Data Sheet

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**Trade name: Calcium Hardness Indicator Powder**

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· **General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Other adverse effects** No relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

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.

· **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 Not regulated.

· **UN proper shipping name**

· DOT, ADR/RID/ADN, IMDG, IATA Not regulated.

· **Transport hazard class(es)**

· DOT, ADR/RID/ADN, IMDG, IATA

· Class Not regulated.

· **Packing group**

· DOT, ADR/RID/ADN, IMDG, IATA Not regulated.

· **Environmental hazards**

· Marine pollutant: No

· **Special precautions for user**

Not applicable.

· **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

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**Trade name: Calcium Hardness Indicator Powder**

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· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

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

None of the ingredients are listed.

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

7647-14-5 Sodium chloride

2538-85-4 sodium 3-hydroxy-4-(2-hydroxy-1-naphthylazo)-1-naphthalenesulphonate

· **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:**

None of the ingredients are listed.

· **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

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

· **Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sor\\_internet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do))

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(Cont'd. on page 8)

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