

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91886-00  
Product Identity: Total Alkalinity Indicator

**Chemical Family:** Not Applicable  
**Synonyms:** None  
**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

Issue Date: 10/22/10  
Revision Date:

## Section 2 – Hazard Identification

### **Emergency Overview**

Non-flammable, non-corrosive, non-toxic. Does not present significant health hazards. Wash areas of contact with water.

**Appearance:** Clear, dark green liquid                      **Odor:** Odorless

**Target Organs:** Eyes, skin.

### **Potential Health Effects/ Routes of Exposure:**

**Eyes:** May cause slight irritation.

**Skin:** May cause slight irritation.

**Ingestion:** Large doses may cause upset stomach

**Inhalation:** Not likely to be a hazard by inhalation.

**Chronic Effect / Carcinogenicity:** None(IARC, NTP, OSHA)

**Aggravated Medical Conditions** No information available

These chemicals are not considered hazardous by OSHA.

See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 – Composition, Information on Ingredients

Bromocresol Green Na Salt, CAS# 62625-32-5, 0.06% w/v.

Methyl Red Na Salt, CAS# 845-10-3, 0.04% w/v.

Water, purified, CAS# 7732-18-5, >98% w/v.

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.

**Ingestion:** Induce vomiting. Dilute with water or milk. Get medical assistance.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable    **Autoignition Temperature** No information available.

**Explosion Limits Upper** No data available                      **Lower** No data available

**Extinguishing Media:** Use means suitable to extinguishing surrounding fire.

**Unsuitable Extinguishing Media:** No information available

**Fire & Explosion Hazards:** Not considered to be a fire or explosion hazard.

**Fire Fighting Instructions / Equipment:** Use normal procedures. Toxic gas may be produced in fire. Use protective clothing. Use NIOSH-approved breathing equipment.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** No information available.

**NFPA Rating:** (estimated) Health: 1; Flammable: 0; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use personal protective equipment. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** No information Available.

**Methods for Containment and Clean Up** Collect liquid and dilute with water and release to drain. For larger spills, absorb with suitable material. Always obey local regulations.

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes. Do not mix with bases.

**Storage:** Keep Protect from freezing and physical damage.

## **Section 8 – Exposure Controls, Personal Protection**

Bromocresol Green Na Salt, CAS# 62625-32-5, ACGIH TLV: NA, OSHA PEL: NA

Methyl Red Na Salt, CAS# 845-10-3, ACGIH TLV: NA, OSHA PEL: NA

Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, dark green liquid

**Odor:** Odorless

**Boiling Point:** Approx 100C

**Melting Point:** Approx 0C

**Vapor Density:** No Information Available

**Evaporation Rate:** No information Available

**pH:** Approximately 8.5

**Flammability:** No Information Available

**Solubility:** Infinite  
available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** Approx 1

**Vapor Pressure:** No information Available

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** Not available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** None Identified.

**Conditions to Avoid:** No information Available

**Hazardous Decomposition Products:** None expected

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** Not available.

## **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: NA

LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

### **Chronic Exposure**

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** No information available.

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No information available.

**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** No information available.

**Persistence and Degradability:** No Information Available

**Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Dilute with water and flush to sewer.

All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

### **Section 14 – Transport Information**

**DOT - Not Regulated**

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are not considered hazardous by OSHA.

**Canada DSL:** CAS# 845-10-3 and CAS# 76-60-8 are listed on Canada's DSL List

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** Not applicable

**WHMIS:** Not Applicable.

### **Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained form the products use.

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2821 Nebraska Avenue, Toledo, OH 43607 (419) 725-3750  
Emergency Telephone No.: 800-535-5053

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91887-00  
Product Identity: Sulfuric Acid 0.12N

**Chemical Family:** Not Applicable  
**Synonyms:** Not Applicable  
**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

**Issue Date:** 10/22/10  
**Revision Date:**

## Section 2 – Hazard Identification

**Emergency Overview:** May irritate eyes and skin. Wash areas of contact with water.  
**Appearance:** Clear, colorless liquid      **Odor:** Odorless  
**Target Organs:** Eyes, skin, respiratory system, teeth  
**Potential Health Effects/ Routes of Exposure:**  
**Eyes:** May cause slight irritation.  
**Skin:** May cause slight irritation, redness, and pain.  
**Ingestion:** May cause irritation, vomiting, and diarrhea.  
**Inhalation:** May cause irritation.  
**Chronic Effect / Carcinogenicity:** None (IARC, NTP, OSHA)  
**Aggravated Medical Conditions** No information available  
These chemicals are not considered hazardous by OSHA.  
See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 – Composition, Information on Ingredients

Sulfuric Acid, CAS# 7664-93-9, <1% w/v  
Water, purified, CAS# 7732-18-5, >99% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.  
**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.  
**Ingestion:** DO NOT induce vomiting. Dilute with water or milk. Get medical assistance.  
**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.  
**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable      **Autoignition Temperature** No information available.  
**Explosion Limits Upper** No data available      **Lower** No data available  
**Extinguishing Media:** Dry Chemical, foam, or carbon dioxide.  
**Unsuitable Extinguishing Media:** No information available  
**Fire & Explosion Hazards:** Can react with metal to form flammable and explosive hydrogen gas.  
**Fire Fighting Instructions / Equipment:** Use normal procedures. Use protective clothing. Use NIOSH-approved breathing equipment.  
**Hazardous Combustion Products:** No information Available  
**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** No information available

**NFPA Rating:** (estimated) Health: 1; Flammable: 0; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Not relevant considering the small amounts used.

**Methods for Containment and Clean Up** Cover spill with sodium carbonate or soda ash. Add water to slurry. Decant water to drain with excess water. Dispose of remaining solid as normal refuse. Always obey local regulations.

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes. Do not mix with bases.

**Storage:** Keep container tightly closed. Do not store near combustible materials. Protect from freezing and physical damage. Store in a cool, dry, well-ventilated area. Do not mix with bases.

## **Section 8 – Exposure Controls, Personal Protection**

Sulfuric Acid, CAS# 7664-93-9, ACGIH TLV: 1mg/m<sup>3</sup>, OSHA PEL: 1mg/m<sup>3</sup>

Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, colorless liquid

**Odor:** Odorless

**Boiling Point:** Approx 100C

**Melting Point:** Below 0

**Vapor Density:** No Information Available

**Evaporation Rate:** No Information Available

**pH:** < 2

**Flammability:** No Information Available

**Solubility:** Infinite

available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** Approx 1

**Vapor Pressure:** No Information Available

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** Not available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** Organics, chlorates, alkalines, carbides, fulminates, reducing agents, nitrates, acetic acid, oxidizing agents, metals.

**Conditions to Avoid:** No Information Available.

**Hazardous Decomposition Products:** Oxides of sulfur.

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** None under normal processing.

## **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: 2140 mg/kg

LC50 inhalation-rat: 510 mg/m<sup>3</sup>/2H

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

**Chronic Exposure**

**Carcinogenicity** No Information Available

**Sensitization** No information available.  
**Mutagenic Effects** No information available.  
**Reproductive Effects** No information available.  
**Developmental Effects (Immediate/Delayed)** No information available.  
**Teratogenicity** No information available.  
**Other Adverse Effects** No Information Available.  
**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** Concentrated sulfuric acid has moderate acute and chronic toxicity to aquatic life. Small quantities will be neutralized by natural alkalinity.  
**Persistence and Degradability:** No Information Available      **Mobility:** No Information Available  
**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Neutralize with soda ash or calcium carbonate.  
All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

### **Section 14 – Transport Information**

DOT - Not Regulated

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are not considered hazardous by OSHA.  
**Canada DSL:** These chemicals are listed on the Canada DSL list.  
**TSCA:** The components of this solution are listed on the TSCA Inventory  
**SARA Title III Section 313:** Not Applicable  
**RCRA Status:** Not Applicable  
**CERCLA Reportable Quantity:** Sulfuric Acid – 1000lbs.  
**WHMIS:** Not Applicable.

### **Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained form the products use.

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91888-00  
Product Identity: EDTA Hardness Reagent

**Chemical Family:** Not Applicable  
**Synonyms:** Not Applicable  
**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

Issue Date: 10/22/10  
Revision Date: 12/29/10

## Section 2 – Hazard Identification

Emergency Overview  
Does not present any significant health hazards. Wash areas of contact with water.

**Appearance:** Clear, colorless liquid                      **Odor:** Odorless  
**Target Organs:** Eyes and skin.  
**Potential Health Effects/ Routes of Exposure:**  
**Eyes:** May cause slight irritation.  
**Skin:** May cause slight irritation.  
**Ingestion:** Large doses may cause upset stomach  
**Inhalation:** Not likely to be a hazard by inhalation.  
**Chronic Effect / Carcinogenicity:** None (IARC, NTP, OSHA)  
**Aggravated Medical Conditions** No information available  
These chemicals are not considered hazardous by OSHA.  
See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 –Composition, Information on Ingredients

EDTA Disodium Dihydrate, CAS# 6381-92-6, <3% w/v  
Water, purified, CAS# 7732-18-5, >97% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.  
**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.  
**Ingestion:** Dilute with water or milk. Get medical assistance.  
**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.  
**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable    **Autoignition Temperature** No information available.  
**Explosion Limits Upper** No data available                      **Lower** No data available  
**Extinguishing Media:** Any means suitable for extinguishing fire.  
**Unsuitable Extinguishing Media:** No information available  
**Fire & Explosion Hazards:** Not considered to be a fire or explosion hazard.

**Fire Fighting Instructions / Equipment:** Use normal procedures. Use protective clothing. Use NIOSH-approved breathing equipment.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** Thermal decomposition can lead to release of irritating gases and vapors

**NFPA Rating:** (estimated) Health: 1; Flammable: 0; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use proper personal protective equipment. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Not Applicable

**Methods for Containment and Clean Up** Absorb with suitable material and treat as normal refuse. Small amounts may be flushed with excess water to sewer. Always obey local regulations.

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes.

**Storage:** Protect from freezing and physical damage.

## **Section 8 – Exposure Controls, Personal Protection**

EDTA Disodium Dihydrate, CAS# 6381-92-6, ACGIH TLV: NA, OSHA PEL: NA

Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate.

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, colorless liquid

**Odor:** Odorless

**Boiling Point:** Approx 100C

**Melting Point:** Approx 0C

**Vapor Density:** >1

**Evaporation Rate:** Not available

**pH:** 8-10

**Flammability:** No Information Available

**Solubility:** Infinite  
available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** Approx 1

**Vapor Pressure:** Not Applicable

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** Not available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** Strong oxidizers, copper, aluminum

**Hazardous Decomposition Products:** Carbon dioxide, carbon monoxide, nitrogen oxides

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** Not Available

## **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: 2000mg/kg (EDTA Disodium Anhydrous)

LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

**Chronic Exposure**

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** No Information available.

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No information available.

**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** Not applicable

**Persistence and Degradability:** No Information Available

**Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Dilute with water and flush to sewer.

### **Section 14 – Transport Information**

**DOT – Not Regulated**

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are not considered hazardous by OSHA.

**Canada DSL:** These chemicals are not on Canada's DSL list.

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** EDTA Disodium Dihydrate – 5000 lb

**WHMIS:** Not Applicable

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

### **Section 16 – Additional Information**

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# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91889-00  
Product Identity: Hardness Buffer

**Chemical Family:** Not Applicable  
**Synonyms:** Not Available  
**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

**Issue Date:** 10/22/10  
**Revision Date:**

## Section 2 – Hazard Identification

### **Emergency Overview**

Warning. Hazardous fumes and liquid. Use with adequate ventilation. Avoid breathing vapor. Avoid contact with skin, eyes, and clothing. Do not induce vomiting. Get medical attention. Wash areas of contact for at least 15 minutes. For eyes, get medical attention.

**Appearance:** Clear, colorless liquid                      **Odor:** Ammonia odor

**Target Organs:** Respiratory system, eyes, skin.

**Potential Health Effects/ Routes of Exposure:**

**Eyes:** May cause severe burns and eye damage.

**Skin:** May cause serious damage to the skin, skin burns, redness, and pain.

**Ingestion:** May cause corrosion to the stomach and esophagus, with perforation and peritonitis; chest, mouth and abdomen pain, coughing, vomiting, collapse. Small doses can be fatal.

**Inhalation:** Causes irritation to the upper respiratory tract, burns, pulmonary edema, and death.

**Chronic Effect / Carcinogenicity:** None. (IARC, NTP, OSHA)

**Aggravated Medical Conditions** No information available

These chemicals are not considered hazardous by OSHA.

See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 – Composition, Information on Ingredients

Ammonium Hydroxide, CAS# 1336-21-6, <52% w/v

Ammonium Chloride, CAS# 12125-02-9, <7% w/v

EDTA Mg Salt, CAS# 15954-95-7, <1% w/v

Water, purified, CAS# 7732-18-5, >40% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.

**Ingestion:** DO NOT induce vomiting. Dilute with water or milk. Get medical assistance.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable    **Autoignition Temperature** No information available.

**Explosion Limits Upper** No data available                      **Lower** No data available

**Extinguishing Media:** Any means suitable for extinguishing fire. Use water spray to blanket fire, cool fire exposed containers, and flush non-ignited spills away from fire.

**Unsuitable Extinguishing Media:** No information available

**Fire & Explosion Hazards:** Flammable vapors may accumulate in confined spaces.

**Fire Fighting Instructions / Equipment:** Use normal procedures. Use protective clothing. Use NIOSH-approved breathing equipment.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** No information available.

**NFPA Rating:** (estimated) Health: 3; Flammable: 0; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Cover with mixture of sodium carbonate/calcium carbonate, clay, and sand. Pick up and place in suitable container and in fume hood add water. Neutralize with dilute hydrochloric acid, let stand in over night and flush to drain with plenty of water. Keep in suitable and closed containers for disposal

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes. Do not mix with acids.

**Storage:** Keep container tightly closed. Protect from freezing and physical damage. Store below 25 C. Empty containers may be hazardous since they may contain product residue.

## **Section 8 – Exposure Controls, Personal Protection**

Ammonium Hydroxide, CAS# 1336-21-6, ACGIH TLV: 17mg/m<sup>3</sup>, OSHA PEL: 35mg/m<sup>3</sup>.

Ammonium Chloride, CAS# 12125-02-9, ACGIH TLV: 10mg/m<sup>3</sup>, OSHA PEL: NA

EDTA Mg Salt, CAS# 15954-95-7, ACGIH TLV: NA, OSHA PEL: NA

Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Local/general exhaust is recommended. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** If the TLV is exceeded, a full-face chemical cartridge respirator may be worn up to 50 times the TLV or the maximum use of concentration specified for the respirator supplier.

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, colorless liquid

**Odor:** Ammonia odor

**Boiling Point:** No Information Available

**Melting Point:** No Information Available

**Vapor Density:** No Information Available

**Evaporation Rate:** No Information Available

**pH:** No Information Available

**Flammability:** No Information Available

**Solubility:** Infinite  
available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** Approx 1

**Vapor Pressure:** No Information Available

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** Not available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** Strong oxidizers, nitric acids, calcium hypochlorite bleaches, gold, mercury, silver, halogens.

**Conditions to Avoid:** No information available.

**Hazardous Decomposition Products:** Oxides of Nitrogen and ammonia.

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** None under normal processing.

### **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: 350mg/kg (Ammonium Hydroxide), 1650 mg/kg (Ammonium Chloride)

LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

#### **Chronic Exposure**

**Carcinogenicity** No Information Available

**Sensitization** No information available.

**Mutagenic Effects** No Information Available

**Reproductive Effects** No Information Available

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No Information Available

**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** Expected to be very toxic to aquatic life

**Persistence and Degradability:** No Information Available

**Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Ventilate area of spill. Cover spill with mixture of sodium carbonate/calcium carbonate, clay, and sand. Pick up and place in suitable container and in fume hood add water. Neutralize with dilute hydrochloric acid, let stand in over night and flush to drain with plenty of water. Dispose of solid with normal refuse. Wash area of spill with plenty of water. All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

### **Section 14 – Transport Information**

DOT – UN2672, Ammonia Solution, 8, III

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are considered hazardous by OSHA.

**Canada DSL:** This items are listed on Canada's DSL list.

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** Ammonium Chloride – 5000 lbs, Ammonium Hydroxide – 1000 lbs.

**WHMIS:** E: Corrosive Material

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

### **Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained form the products use.

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91890-00

Product Identity: Hardness Indicator Liquid

**Chemical Family:** No information available

**Synonyms:** None

**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

**Issue Date:** 10/22/10

**Revision Date:**

## Section 2 – Hazard Identification

### **Emergency Overview**

May cause eye, skin, and respiratory tract irritation. The toxicological properties have not been fully investigated.

**Appearance:** Clear, Purple liquid

**Odor:** Odorless

**Target Organs:** Eyes, skin..

### **Potential Health Effects/ Routes of Exposure:**

**Eyes:** May cause slight irritation.

**Skin:** May cause slight irritation.

**Ingestion:** May cause slight irritation of digestive tract.

**Inhalation:** Not likely to be a hazard by inhalation.

**Chronic Effect / Carcinogenicity:** None(IARC, NTP, OSHA)

**Aggravated Medical Conditions** No information available

These chemicals are not considered hazardous by OSHA.

See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 – Composition, Information on Ingredients

Calmagite, CAS# 3147-14-6, 0.05% w/v

Water, purified, CAS# 7732-18-5, >99% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.

**Ingestion:** DO NOT induce vomiting. Dilute with water or milk. Get medical assistance.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable **Autoignition Temperature** No information available.

**Explosion Limits Upper** No data available **Lower** No data available

**Extinguishing Media:** Use means suitable to extinguishing surrounding fire.

**Unsuitable Extinguishing Media:** No information available

**Fire & Explosion Hazards:** Not considered to be a fire or explosion hazard.

**Fire Fighting Instructions / Equipment:** Use normal procedures. Toxic gas may be produced in fire. Use protective clothing. Use NIOSH-approved breathing equipment.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** No information available.

**NFPA Rating:** (estimated) Health: 1; Flammable: 0; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use personal protective equipment. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable and closed containers for disposal

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes.

**Storage:** Keep Protect from freezing and physical damage.

## **Section 8 – Exposure Controls, Personal Protection**

Calmagite, CAS# 3147-14-6, ACGIH TLV: NA, OSHA PEL: NA

Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, Purple Liquid

**Odor:** Calmagite Odor

**Boiling Point:** Approx 100C

**Melting Point:** Approx 0C

**Vapor Density:** No Information Available

**Evaporation Rate:** > 1

**pH:** Not Applicable

**Flammability:** No Information Available

**Solubility:** Infinite  
available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** Approx 1

**Vapor Pressure:** 14mmHg @ 20C

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** Not available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** None Identified

**Conditions to Avoid:** Excess heat.

**Hazardous Decomposition Products:** None Identified

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** Not available.

## **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: NA

LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

### **Chronic Exposure**

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.  
**Mutagenic Effects** No information available.  
**Reproductive Effects** No information available.  
**Developmental Effects (Immediate/Delayed)** No information available.  
**Teratogenicity** No information available.  
**Other Adverse Effects** No information available.  
**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** No information available  
**Persistence and Degradability:** No Information Available      **Mobility:** No Information Available  
**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

### **Section 14 – Transport Information**

**DOT - Not Regulated**

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are not considered hazardous by OSHA.  
**Canada DSL:** These chemicals are listed on Canada's DSL list.  
**TSCA:** The components of this solution are listed on the TSCA Inventory  
**SARA Title III Section 313:** Not Applicable  
**RCRA Status:** Not Applicable  
**CERCLA Reportable Quantity:** Not Applicable  
**WHMIS:** Not controlled

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

### **Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained form the products use.

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91891-00  
Product Identity: Orthotolidine Indicator

**Chemical Family:** No information available  
**Synonyms:** No Information Available  
**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

**Issue Date:** 10/22/10  
**Revision Date:**

## Section 2 – Hazard Identification

### **Emergency Overview**

Corrosive liquid. Contains a suspected carcinogen. Handle with care. May irritate skin and eyes. Handle with care. Wash areas of contact with water. If ingested dilute with water and get medical attention.

**Appearance:** Clear, colorless liquid                      **Odor:** Slightly acrid odor

**Target Organs:** Eyes, skin, respiratory system, gastrointestinal tract

### **Potential Health Effects/ Routes of Exposure:**

**Eyes:** May cause irritation, redness, pain, tearing

**Skin:** May cause irritation

**Ingestion:** May cause nausea, vomiting, and diarrhea.

**Inhalation:** May cause irritation.

**Chronic Effect / Carcinogenicity** Possible carcinogen

**Aggravated Medical Conditions** No information available

These chemicals are considered hazardous by OSHA.

See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 – Composition, Information on Ingredients

Hydrochloric Acid, CAS# 7647-01-0, <15% v/v

Water, purified, CAS# 7732-18-5, <84% v/v

o-Tolidine, CAS# 119-93-7, <1% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.

**Ingestion:** DO NOT induce vomiting. Dilute with water or milk. Get medical assistance.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable    **Autoignition Temperature** No information available.

**Explosion Limits Upper** No data available                      **Lower** No data available

**Extinguishing Media:** Use means suitable to extinguishing surrounding fire. Neutralize with soda ash or slaked lime.

**Unsuitable Extinguishing Media:** No information available

**Fire & Explosion Hazards:** May react with metals to release hydrogen gas.

**Fire Fighting Instructions / Equipment:** Use normal procedures. Can react with metal to form flammable and explosive hydrogen gas. Use protective clothing. Use NIOSH-approved breathing equipment.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** Thermal decomposition can lead to release of irritating gases and vapors

**NFPA Rating:** (estimated) Health: 2; Flammable: 0; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Cover with sodium carbonate or soda ash. Add water to make slurry. Decant to drain. Treat the solid residue as normal refuse. Wash site with soda ash solution. Always obey local regulations.

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes.

**Storage:** Keep Protect from freezing and physical damage.

## **Section 8 – Exposure Controls, Personal Protection**

Hydrochloric Acid, CAS# 7647-01-0, ACGIH TLV: 7.5mg/m<sup>3</sup>, OSHA PEL: 7mg/m<sup>3</sup>

Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

o-Tolidine, CAS# 119-93-7, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Ensure ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** If exposure limits are reached use approved respirator

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, colorless liquid

**Odor:** Slightly acid odor

**Boiling Point:** Approx 100C

**Melting Point:** Approx 0C

**Vapor Density:** No Information Available

**Evaporation Rate:** No Information Available

**pH:** No information available

**Flammability:** No Information Available

**Solubility:** Misible  
available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** 1.01

**Vapor Pressure:** No Information Available

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** No Information Available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** Alkalis, sulfides, cyanides, formaldehyde, sulfites, most metals, active metals, metal oxides

**Conditions to Avoid:** No information available

**Hazardous Decomposition Products:** Fumes of hydrogen chloride and hydrogen in contact with metals. Chloride gas from oxidizers.

**Hazardous Polymerization:** Does not occur  
**Hazardous Reactions:** None under normal processing.

### **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2  
LD50 orl-rat: 900mg/kg (Hydrochloric acid)                      LC50 inhalation-rat: NA  
**Irritation:** No Information Available  
**Toxicologically Synergistic:** No Information Available  
**Chronic Exposure**  
**Carcinogenicity** There are no known carcinogenic chemicals in this product  
**Sensitization** No information available.  
**Mutagenic Effects** Mutagenic effects have occurred in microorganisms.  
**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.  
**Developmental Effects (Immediate/Delayed)** No information available.  
**Teratogenicity** No information available.  
**Other Adverse Effects** No information available.  
**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** Hydrogen chloride has slight acute and chronic toxicity to aquatic life.  
**Persistence and Degradability:** No Information Available                      **Mobility:** No Information Available  
**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Cover spill with soda ash or calcium carbonate. Mix and add water to form slurry. Decant to drain. Treat the solid residue as normal refuse.  
All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

### **Section 14 – Transport Information**

DOT – UN1760, Corrosive Liquids, N.O.S., (Hydrochloric Acid Solution), 8, II

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are considered hazardous by OSHA.  
**Canada DSL:** These chemicals are listed on Canada's DSL list.  
**TSCA:** The components of this solution are listed on the TSCA Inventory  
**SARA Title III Section 313:** Not Applicable  
**RCRA Status:** Not Applicable  
**CERCLA Reportable Quantity:** Hydrochloric acid – 5000 lbs.  
**WHMIS:** E: Corrosive Material. D-2B: Poisonous and Infectious material. Materials causing other toxic effects-toxic material.

### **Section 16 – Additional Information**

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**Flash Point:** Approximately 13C (Isopropanol) **Autoignition Temperature** Approximately 398C

**Explosion Limits Upper** 12.7 **Lower** 2.0

**Extinguishing Media:** Dry Chemical, foam, or carbon dioxide. Water can be used to dilute to non-flammable mixtures.

**Unsuitable Extinguishing Media:** No information available

**Fire & Explosion Hazards:** Vapors can flow to distant ignition sources and flashback. Use water spray to cool fire exposed containers, and flush non-ignited spills or vapors away from fire.

**Fire Fighting Instructions / Equipment:** Vapors can flow to distant ignition sources and flashback. Use water spray to cool fire exposed containers, and flush non-ignited spills or vapors away from fire.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** No information available

**NFPA Rating:** (estimated) Health: 1; Flammable: 2; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Not relevant considering the small amounts used.

**Methods for Containment and Clean Up** Remove source from ignition. Contain spill. Do not flush to sewer. Absorb with inert material and place in chemical waste container. Ventilate spill area. Have extinguishing agent available in case of fire. Use non-sparking equipment. Always obey local regulations.

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes. Do not mix with bases.

**Storage:** Keep container tightly closed. Do not store near combustible materials. Protect from freezing and physical damage. May be hazardous since they retain product residue.

## **Section 8 – Exposure Controls, Personal Protection**

Isopropyl Alcohol, CAS# 67-63-0, 50%, ACGIH TLV: 983mg/m<sup>3</sup>, OSHA PEL: 980mg/m<sup>3</sup>

Phenolphthalein, CAS# 77-09-8, 0.5%, ACGIH TLV: NA, OSHA PEL: NA

Water, purified, CAS# 7732-18-5, 50%, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Dark Green liquid

**Odor:** Mild alcohol

**Boiling Point:** No information available

**Melting Point:** No information available

**Vapor Density:** No information available

**Evaporation Rate:** No information available

**pH:** Not available

**Flammability:** No Information Available

**Solubility:** Infinite

available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** No information available

**Vapor Pressure:** No information available

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** No information available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** Oxidizers, aldehydes, heat, sparks, open flame. Metallic oxides may cause ignition.

**Conditions to Avoid:** Ignition sources, excess heat.

**Hazardous Decomposition Products:** Acrid and irritating fumes, including toxic oxides of carbon will heat to combustion.

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** None under normal processing.

### **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: 1 g/kg (Phenolphthalein), 5045 mg/kg (Isopropanol)

LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

#### **Chronic Exposure**

**Carcinogenicity** Phenolphthalein is in California.

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** No information available.

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No Information Available.

**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** Not Available.

**Persistence and Degradability:** No Information Available

**Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Do not flush to sewer. Absorb with inert material and place in chemical waste container for proper disposal in a disposable facility for incineration in a chemical incinerator. Ventilate spill area. Have extinguishing agent available in case of fire. Eliminate all sources of ignition. Use non-sparking equipment.

All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

### **Section 14 – Transport Information**

DOT – UN1993, Flammable Liquids, N.O.S., (Isopropanol Solution), 3, II

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are considered hazardous by OSHA.

**Canada DSL:** The components of this solution are listed on Canada's DSL list.

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** Not reported.

**WHMIS:** B3: Flammable and Combustible material. Combustible Liquid.D-2B: Poisonous and infectious material. Materials causing other toxic effects-toxic material.

### **Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.



**Extinguishing Media:** Dry Chemical, foam, or carbon dioxide. Water can be used to dilute to non-flammable mixtures.

**Unsuitable Extinguishing Media:** No information available

**Fire & Explosion Hazards:** Vapors can flow to distant ignition sources and flashback. Use water spray to cool fire exposed containers, and flush non-ignited spills or vapors away from fire.

**Fire Fighting Instructions / Equipment:** Vapors can flow to distant ignition sources and flashback. Use water spray to cool fire exposed containers, and flush non-ignited spills or vapors away from fire.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** No information available

**NFPA Rating:** (estimated) Health: 1; Flammable: 2; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Not relevant considering the small amounts used.

**Methods for Containment and Clean Up** Remove source from ignition. Contain spill. Do not flush to sewer. Absorb with inert material and place in chemical waste container. Ventilate spill area. Have extinguishing agent available in case of fire. Use non-sparking equipment. Always obey local regulations.

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes. Do not mix with bases.

**Storage:** Keep container tightly closed. Do not store near combustible materials. Protect from freezing and physical damage. May be hazardous since they retain product residue.

## **Section 8 – Exposure Controls, Personal Protection**

Isopropyl Alcohol, CAS# 67-63-0, 50%, ACGIH TLV: 983mg/m<sup>3</sup>, OSHA PEL: 980mg/m<sup>3</sup>

Phenolphthalein, CAS# 77-09-8, 0.5%, ACGIH TLV: NA, OSHA PEL: NA

Water, purified, CAS# 7732-18-5, 50%, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, colorless liquid

**Odor:** Mild alcohol

**Boiling Point:** Approx 82C

**Melting Point:** -88C

**Vapor Density:** 2.1

**Evaporation Rate:** 2.88

**pH:** Not available

**Flammability:** No Information Available

**Solubility:** Infinite

available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** 0.85-0.95

**Vapor Pressure:** 40mmHG

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** 0

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** Oxidizers, aldehydes, heat, sparks, open flame. Metallic oxides may cause ignition.

**Conditions to Avoid:** Ignition sources, excess heat.

**Hazardous Decomposition Products:** Acrid and irritating fumes, including toxic oxides of carbon will heat to combustion.

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** None under normal processing.

### **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: 1 g/kg (Phenolphthalein), 5045 mg/kg (Isopropanol)

LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

#### **Chronic Exposure**

**Carcinogenicity** Phenolphthalein is in California.

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** No information available.

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No Information Available.

**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** Not Available.

**Persistence and Degradability:** No Information Available

**Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Do not flush to sewer. Absorb with inert material and place in chemical waste container for proper disposal in a disposable facility for incineration in a chemical incinerator. Ventilate spill area. Have extinguishing agent available in case of fire. Eliminate all sources of ignition. Use non-sparking equipment.

All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

### **Section 14 – Transport Information**

DOT – UN1993, Flammable Liquids, N.O.S., (Isopropanol Solution), 3, II

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are considered hazardous by OSHA.

**Canada DSL:** The components of this solution are listed on Canada's DSL list.

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** Not reported.

**WHMIS:** B3: Flammable and Combustible material. Combustible Liquid.D-2B: Poisonous and infectious material. Materials causing other toxic effects-toxic material.

### **Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.

Betco  
2821 Nebraska Avenue, Toledo, OH 43607 (419) 725-3750  
Emergency Telephone No.: 800-535-5053

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91884-00

Product Identity: Sodium Thiosulfate 0.0365N

**Chemical Family:** Not Applicable

**Synonyms:** Thiosulfuric acid, disodium salt pentahydrate solutions (certified)

**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331

Emergency Contact Number (24hr): InfoTrac (800) 535-5053

Issue Date: 10/22/10

Revision Date: 12/29/10

## Section 2 – Hazard Identification

Emergency Overview

May cause eye, skin, respiratory system irritation. Wash areas of contact with water. If ingested, dilute with water and get medical assistance.

**Appearance:** Clear, colorless liquid

**Odor:** Odorless

**Target Organs:** Eyes and skin.

**Potential Health Effects/ Routes of Exposure:**

**Eyes:** May cause slight irritation.

**Skin:** May cause slight irritation.

**Ingestion:** Large doses may cause upset stomach

**Inhalation:** May cause mild irritation to the respiratory tract

**Chronic Effect / Carcinogenicity:** None (IARC, NTP, OSHA)

**Aggravated Medical Conditions** No information available

These chemicals are not considered hazardous by OSHA.

See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 –Composition, Information on Ingredients

Sodium Thiosulfate, CAS# 10102-17-7, < 5% w/v

Sodium Tetraborate, Decahydrate, CAS# 1303-96-4, <1% w/v

Water, purified, CAS# 7732-18-5, >94% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.

**Ingestion:** Dilute with water or milk. Get medical assistance.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable **Autoignition Temperature** No information available.

**Explosion Limits Upper** No data available **Lower** No data available

**Extinguishing Media:** Any means suitable for extinguishing fire.

**Unsuitable Extinguishing Media:** No information available

**Fire & Explosion Hazards:** Not considered to be a fire or explosion hazard.

**Fire Fighting Instructions / Equipment:** Use normal procedures. Use protective clothing. Use NIOSH-approved breathing equipment.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** Thermal decomposition can lead to release of irritating gases and vapors

**NFPA Rating:** (estimated) Health: 1; Flammable: 0; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use proper personal protective equipment. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Not Applicable

**Methods for Containment and Clean Up** Absorb with suitable material and treat as normal refuse. Small amounts may be flushed with excess water to sewer. Always obey local regulations.

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes.

**Storage:** Protect from freezing and physical damage.

## **Section 8 – Exposure Controls, Personal Protection**

Sodium Thiosulfate, CAS# 10102-17-7, ACGIH TLV: NA, OSHA PEL: NA

Sodium Tetraborate, Decahydrate, CAS# 1303-96-4, ACGIH TLV: NA, OSHA PEL: NA

Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate.

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, colorless liquid

**Odor:** Odorless

**% Volatility:** No Information Available

**Boiling Point:** Approx 100C

**Specific Gravity:** Approx 1

**Melting Point:** Approx 0C

**Vapor Pressure:** Not Applicable

**Vapor Density:** >1

**Flash Point:** Not Applicable

**Evaporation Rate:** Not available

**Coefficient of water/oil distribution:** Not Available

**pH:** Not Applicable

**Odor Threshold:** Not Available

**Flammability:** No Information Available

**Decomposition Temperature:** No Information Available

**Solubility:** Infinite

**Partition Coefficient n-octanol/water:** No data

available

**Relative Density:** No Information Available

**Molecular Weight:** Not available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** Metal nitrates, lead, mercury, silver salts, acids, iodine, sodium nitrate

**Hazardous Decomposition Products:** Oxides of sodium and sulfur

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** Not Available

## **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: NA

LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

**Chronic Exposure**

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** No Information available.

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No information available.

**Endocrine Disruptor Information** No information available

**Section 12 – Ecological Information**

**Ecotoxicity:** Not applicable

**Persistence and Degradability:** No Information Available

**Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

**Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Dilute with water and flush to sewer.

**Section 14 – Transport Information**

**DOT – Not Regulated**

**Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are not considered hazardous by OSHA.

**Canada DSL:** These chemicals are on Canada's DSL list.

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** Not Applicable

**WHMIS:** Not Applicable

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91892-00

Product Identity: Iron #1

**Chemical Family:** No information available

**Synonyms:** No information available

**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

**Issue Date:** 10/22/10

**Revision Date:**

## Section 2 – Hazard Identification

### **Emergency Overview**

Toxic by ingestion. Extremely irritating to the eyes, skin, and mucous membranes. Wash areas of contact for at least 15 minutes. If irritation persists, get medical attention.

**Appearance:** Clear, Colorless Liquid      **Odor:** Odorless

**Target Organs:** Eyes, skin, respiratory system, and gastrointestinal tract.

### **Potential Health Effects/ Routes of Exposure:**

**Eyes:** May cause irritation, redness, pain, and tearing.

**Skin:** May cause slight irritation.

**Ingestion:** May cause nausea, vomiting, and headache. May convert hemoglobin to methemoglobin causing cyanosis.

**Inhalation:** May cause irritation.

**Chronic Effect / Carcinogenicity:** None (NTP, OSHA)

IARC – unclassified as to carcinogenicity

**Aggravated Medical Conditions** No information available

These chemicals are considered hazardous by OSHA.

See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 – Composition, Information on Ingredients

Hydrochloric Acid, CAS# 7647-01-0, 5% w/v

Hydroxylamine Hydrochloride, CAS# 5470-11-1, 5% w/v

Water, purified, CAS# 7732-18-5, 90% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.

**Ingestion:** DO NOT Induce vomiting. Dilute with water or milk. Get medical assistance.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable    **Autoignition Temperature** No information available.

**Explosion Limits Upper** No data available      **Lower** No data available

**Extinguishing Media:** Use means suitable to extinguishing surrounding fire.  
**Unsuitable Extinguishing Media:** No information available  
**Fire & Explosion Hazards:** May react with metals to release hydrogen gas.  
**Fire Fighting Instructions / Equipment:** Use normal procedures. Poisonous gases may be produced in fire. Use protective clothing. Use NIOSH-approved breathing equipment.  
**Hazardous Combustion Products:** No information Available  
**Sensitivity to mechanical impact** No information available.  
**Sensitivity to static discharge** No information available.  
**Specific Hazards Arising from the Chemical:** No information available.  
**NFPA Rating:** (estimated) Health: 2; Flammable: 0; Reactivity: 0

### Section 6 – Accidental Release Measures

**Personal Precautions** Use personal protective equipment. Avoid contact with skin, eyes and clothing.  
**Environmental Precautions** Should not be released into the environment.  
**Methods for Containment and Clean Up** Absorb with suitable material and containerize for disposal. Neutralize with soda ash or slaked lime. Always obey local regulations.

### Section 7 – Handling and Storage

**Handling:** Wash hands after handling. Avoid contact with skin and eyes.  
**Storage:** Protect from freezing and physical damage.

### Section 8 – Exposure Controls, Personal Protection

Hydrochloric Acid, CAS# 7647-01-0, ACGIH TLV: 7.5mg/m<sup>3</sup>, OSHA PEL: 7mg/m<sup>3</sup>  
Hydroxylamine Hydrochloride, CAS# 5470-11-1, ACGIH TLV: NA, OSHA PEL: NA  
Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.  
**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.  
**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

### Section 9 – Physical and Chemical Properties

<b>Appearance/Physical State:</b> Clear, Colorless Liquid	
<b>Odor:</b> Odorless	<b>% Volatility:</b> No Information Available
<b>Boiling Point:</b> No Information Available	<b>Specific Gravity:</b> Approx 1
<b>Melting Point:</b> No Information Available	<b>Vapor Pressure:</b> No Information Available
<b>Vapor Density:</b> No Information Available	<b>Flash Point:</b> Not Applicable
<b>Evaporation Rate:</b> No Information Available	<b>Coefficient of water/oil distribution:</b> Not Available
<b>pH:</b> Not Applicable	<b>Odor Threshold:</b> Not Available
<b>Flammability:</b> No Information Available	<b>Decomposition Temperature:</b> No Information Available
<b>Solubility:</b> Infinite	<b>Partition Coefficient n-octanol/water:</b> No data
available	
<b>Relative Density:</b> No Information Available	<b>Molecular Weight:</b> Not available

### Section 10 – Stability and Reactivity

**Chemical Stability:** Stable under normal conditions of use and storage.  
**Incompatible Materials:** Oxidizers, metals, bases  
**Conditions to Avoid:** Incompatibles  
**Hazardous Decomposition Products:** -NH<sub>3</sub>, HCl, oxides of nitrogen  
**Hazardous Polymerization:** Does not occur  
**Hazardous Reactions:** Not available.

### Section 11 – Toxicological Information

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: 900 mg/kg (Hydrochloric Acid), 141mg/kg (Hydroxylamine Hydrochloride)

LC50 inhalation-rat:

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

**Chronic Exposure**

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** No information available.

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No information available.

**Endocrine Disruptor Information** No information available

**Section 12 – Ecological Information**

**Ecotoxicity:** Hydrogen chloride has slight acute and chronic toxicity to aquatic life.

**Persistence and Degradability:** No Information Available      **Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

**Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Neutralize with dilute bases solutions. Cover spill with soda ash or calcium carbonate. Mix and add water to form slurry. Decant to drain. Treat the solid residue as normal refuse.

All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

**Section 14 – Transport Information**

**DOT – UN1789, Hydrochloric Acid, 8, III**

**Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are considered hazardous by OSHA.

**Canada DSL:** These chemicals are listed on Canada's DSL list.

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** Hydrochloric acid – 1000 lbs.

**WHMIS:** E: Corrosive Material

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91893-00

Product Identity: Iron #2

**Chemical Family:** No information available

**Synonyms:** No information available

**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

**Issue Date:** 10/22/10

**Revision Date:**

## Section 2 – Hazard Identification

### **Emergency Overview**

Toxic by ingestion. May cause eye, skin, respiratory tract irritation. Wash areas of contact for at least 15 minutes. If irritation persists, get medical attention.

**Appearance:** Clear, Colorless Liquid                      **Odor:** Odorless

**Target Organs:** Eyes, skin, and mucous membranes

**Potential Health Effects/ Routes of Exposure:**

**Eyes:** May cause irritation.

**Skin:** May cause irritation. May be harmful if absorbed through the skin

**Ingestion:** May be harmful or toxic if swallowed. May cause digestive tract irritation.

**Inhalation:** May cause respiratory tract irritation.

**Chronic Effect / Carcinogenicity:** None (NTP, OSHA)

IARC – unclassified as to carcinogenicity

**Aggravated Medical Conditions** No information available

These chemicals are considered hazardous by OSHA.

See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 – Composition, Information on Ingredients

Hydrochloric Acid, CAS# 7647-01-0, <0.01% w/v

2,2-Dipyridyl, CAS# 366-18-7, 0.5%w/v

Water, purified, CAS# 7732-18-5, >99% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.

**Ingestion:** DO NOT Induce vomiting. Dilute with water or milk. Get medical assistance.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable    **Autoignition Temperature** No information available.

**Explosion Limits Upper** No data available                      **Lower** No data available

**Extinguishing Media:** Use means suitable to extinguishing surrounding fire.

**Unsuitable Extinguishing Media:** No information available  
**Fire & Explosion Hazards:** May react with metals to release hydrogen gas.  
**Fire Fighting Instructions / Equipment:** Use normal procedures. Poisonous gases may be produced in fire. Use protective clothing. Use NIOSH-approved breathing equipment.  
**Hazardous Combustion Products:** No information Available  
**Sensitivity to mechanical impact** No information available.  
**Sensitivity to static discharge** No information available.  
**Specific Hazards Arising from the Chemical:** No information available.  
**NFPA Rating:** (estimated) Health: 2; Flammable: 0; Reactivity: 0

### **Section 6 – Accidental Release Measures**

**Personal Precautions** Use personal protective equipment. Avoid contact with skin, eyes and clothing.  
**Environmental Precautions** No information available.  
**Methods for Containment and Clean Up** Absorb with suitable material. Flush to sewer if regulations allow. Always obey local regulations.

### **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes.  
**Storage:** Protect from freezing and physical damage.

### **Section 8 – Exposure Controls, Personal Protection**

Hydrochloric Acid, CAS# 7647-01-0, ACGIH TLV: 7.5mg/m<sup>3</sup>, OSHA PEL: 7mg/m<sup>3</sup>  
2,2-Dipyridyl, CAS# 366-18-7, ACGIH TLV: NA, OSHA PEL: NA  
Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.  
**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.  
**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

### **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, Colorless Liquid  
**Odor:** Odorless  
**Boiling Point:** No Information Available  
**Melting Point:** No Information Available  
**Vapor Density:** No Information Available  
**Evaporation Rate:** No Information Available  
**pH:** Not Applicable  
**Flammability:** No Information Available  
**Solubility:** Infinite  
available  
**Relative Density:** No Information Available

**% Volatility:** No Information Available  
**Specific Gravity:** Approx 1  
**Vapor Pressure:** No Information Available  
**Flash Point:** Not Applicable  
**Coefficient of water/oil distribution:** Not Available  
**Odor Threshold:** Not Available  
**Decomposition Temperature:** No Information Available  
**Partition Coefficient n-octanol/water:** No data  
**Molecular Weight:** Not available

### **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.  
**Incompatible Materials:** Strong oxidizers  
**Conditions to Avoid:** Incompatibles  
**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, oxides of nitrogen  
**Hazardous Polymerization:** Does not occur  
**Hazardous Reactions:** Not available.

### **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: 900 mg/kg (Hydrochloric Acid)      LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

**Chronic Exposure**

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** No information available.

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No information available.

**Endocrine Disruptor Information** No information available

**Section 12 – Ecological Information**

**Ecotoxicity:** Hydrogen chloride has slight acute and chronic toxicity to aquatic life.

**Persistence and Degradability:** No Information Available

**Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

**Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Absorb with suitable material and containerize for disposal.

All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

**Section 14 – Transport Information**

**DOT – Not Regulated**

**Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are considered hazardous by OSHA.

**Canada DSL:** These chemicals are listed on Canada's DSL list.

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** Hydrochloric acid – 1000 lbs.

**WHMIS:** Not Applicable

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91899-00

Product Identity: Buffer Solution, pH 7.00

**Chemical Family:** Not Applicable

**Synonyms:** Not Applicable

**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

**Issue Date:** 10/22/10

**Revision Date:**

## Section 2 – Hazard Identification

**Emergency Overview:** Non-flammable, non-corrosive, non-toxic. Does not present significant health hazards. Wash areas of contact with water.

**Appearance:** Clear, yellowish liquid                      **Odor:** Odorless

**Target Organs:** Eyes, skin

**Potential Health Effects/ Routes of Exposure:**

**Eyes:** May cause slight irritation.

**Skin:** May cause slight irritation.

**Ingestion:** May cause diarrhea, nausea, vomiting, and cramps.

**Inhalation:** Not likely to be a hazard.

**Chronic Effect / Carcinogenicity:** None (IARC, NTP, OSHA)

**Aggravated Medical Conditions** No information available

These chemicals are not considered hazardous by OSHA.

See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 – Composition, Information on Ingredients

Sodium Phosphate, Dibasic, CAS# 7558-79-4, <3% w/v

Potassium Phosphate, Monobasic, CAS# 7778-77-0, <2% w/v

Water, purified, CAS# 7732-18-5, >95% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.

**Ingestion:** DO NOT induce vomiting. Dilute with water or milk. Get medical assistance.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable    **Autoignition Temperature** No information available.

**Explosion Limits Upper** No data available                      **Lower** No data available

**Extinguishing Media:** Use means suitable to extinguishing surrounding fire.

**Unsuitable Extinguishing Media:** No information available

**Fire & Explosion Hazards:** Not considered to be a fire or explosion hazard.

**Fire Fighting Instructions / Equipment:** Use normal procedures. Use protective clothing. Use NIOSH-approved breathing equipment.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** No information available

**NFPA Rating:** (estimated) Health: 1; Flammable: 0; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** No information available.

**Methods for Containment and Clean Up** Absorb with suitable material. Always obey local regulations.

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes.

**Storage:** Protect from freezing and physical damage.

## **Section 8 – Exposure Controls, Personal Protection**

Sodium Phosphate, Dibasic, CAS# 7558-79-4, ACGIH TLV: NA, OSHA PEL: NA

Potassium Phosphate, Monobasic, CAS# 7778-77-0, ACGIH TLV: NA, OSHA PEL: NA

Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** Clear, yellow liquid

**Odor:** Odorless

**Boiling Point:** Approx 100C

**Melting Point:** Approx 0 C

**Vapor Density:** No Information Available

**Evaporation Rate:** No Information Available

**pH:** 7.0

**Flammability:** No Information Available

**Solubility:** Infinite

available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** Approx 1

**Vapor Pressure:** No Information Available

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** Not available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials** None identified.

**Conditions to Avoid:** No Information Available.

**Hazardous Decomposition Products:** Oxides of phosphorus.

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** None under normal processing.

## **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: 17 g/kg (Sodium Phosphate, Dibasic)

LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

### **Chronic Exposure**

**Carcinogenicity** No Information Available

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** No information available.

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No Information Available.

**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** Not Available.

**Persistence and Degradability:** No Information Available

**Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Dilute with water.

All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

### **Section 14 – Transport Information**

**DOT - Not Regulated**

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are not considered hazardous by OSHA.

**Canada DSL:** These chemicals are listed on Canada's DSL list.

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** Sodium Phosphate, Dibasic – 5,000 lbs.

**WHMIS:** Not Applicable.

### **Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained form the products use.

Betco  
2821 Nebraska Avenue, Toledo, OH 43607 (419) 725-3750  
Emergency Telephone No.: 800-535-5053

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

Catalog Numbers: 91901-00

Product Identity: Starch Ind. 1%

**Chemical Family:** Not Applicable

**Synonyms:** Not known

**Recommended Use:** Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331  
Emergency Contact Number (24hr): InfoTrac (800) 535-5053

Issue Date: 10/22/10

Revision Date:

## Section 2 – Hazard Identification

Emergency Overview

Wash areas of contact with water. If ingested, dilute with water and get medical assistance.

**Appearance:** Translucent liquid

**Odor:** Slight potato-like odor

**Target Organs:** Eyes and skin.

**Potential Health Effects/ Routes of Exposure:**

**Eyes:** May cause slight irritation.

**Skin:** May cause slight irritation.

**Ingestion:** Large doses may cause upset stomach

**Inhalation:** Not likely to be a hazard by inhalation.

**Chronic Effect / Carcinogenicity:** None (IARC, NTP, OSHA)

**Aggravated Medical Conditions** No information available

These chemicals are not considered hazardous by OSHA.

See section 11 for toxicological information. See section 12 for potential environmental effects.

## Section 3 –Composition, Information on Ingredients

Salicylic Acid, CAS# 69-72-7, 0.1% w/v

Starch, CAS# 9005-25-8, 1.0% w/v

Water, purified, CAS# 7732-18-5, >98% w/v

## Section 4 – First Aid

**Eyes:** Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

**Skin:** Flush with water for 15 minutes. Get medical assistance if irritation develops.

**Ingestion:** Dilute with water or milk. Get medical assistance.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

**Notes to Physician** Treat symptomatically.

## Section 5 – Fire Fighting Measures

**Flash Point:** Not Applicable **Autoignition Temperature** No information available.

**Explosion Limits Upper** No data available **Lower** No data available

**Extinguishing Media:** Any means suitable for extinguishing fire.

**Unsuitable Extinguishing Media:** No information available

**Fire & Explosion Hazards:** Not considered to be a fire or explosion hazard.

**Fire Fighting Instructions / Equipment:** Use normal procedures. Use protective clothing. Use NIOSH-approved breathing equipment.

**Hazardous Combustion Products:** No information Available

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical:** Thermal decomposition can lead to release of irritating gases and vapors

**NFPA Rating:** (estimated) Health: 1; Flammable: 0; Reactivity: 0

## **Section 6 – Accidental Release Measures**

**Personal Precautions** Use proper personal protective equipment. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** No information available

**Methods for Containment and Clean Up** Absorb with suitable material and release to sewer. Always obey local regulations.

## **Section 7 – Handling and Storage**

**Handling:** Wash hands after handling. Avoid contact with skin and eyes. Minimize dust.

**Storage:** Protect from freezing and physical damage.

## **Section 8 – Exposure Controls, Personal Protection**

Salicylic Acid, CAS# 69-72-7, ACGIH TLV: NA, OSHA PEL: NA

Starch, CAS# 9005-25-8, ACGIH TLV: 10 mg/m<sup>3</sup>, OSHA PEL: 15 mg/m<sup>3</sup>

Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA

**Engineering Measures/ General Hygiene:** Normal ventilation is adequate. Ensure eyewash and safety showers are available.

**Personal Protection Equipment: Skin Protection:** Chemical resistant gloves.

**Eye/Face Protection:** Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate.

## **Section 9 – Physical and Chemical Properties**

**Appearance/Physical State:** translucent liquid

**Odor:** slight potato-like odor

**Boiling Point:** No information available

**Melting Point:** No information available

**Vapor Density:** No information available

**Evaporation Rate:** Not available

**pH:** Not Applicable

**Flammability:** No Information Available

**Solubility:** Infinite

available

**Relative Density:** No Information Available

**% Volatility:** No Information Available

**Specific Gravity:** No information available

**Vapor Pressure:** Not Applicable

**Flash Point:** Not Applicable

**Coefficient of water/oil distribution:** Not Available

**Odor Threshold:** Not Available

**Decomposition Temperature:** No Information Available

**Partition Coefficient n-octanol/water:** No data

**Molecular Weight:** Not available

## **Section 10 – Stability and Reactivity**

**Chemical Stability:** Stable under normal conditions of use and storage.

**Incompatible Materials:** Strong oxidizers

**Hazardous Decomposition Products:** Oxides of carbon

**Hazardous Polymerization:** Does not occur

**Hazardous Reactions:** Not Available

## **Section 11 – Toxicological Information**

**Routes of Exposure/Symptoms/Corrosiveness** – See Section 2

LD50 orl-rat: 891 mg/kg (Salicylic acid)

LC50 inhalation-rat: NA

**Irritation:** No Information Available

**Toxicologically Synergistic:** No Information Available

### **Chronic Exposure**

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Reproductive Effects** No Information available.

**Developmental Effects (Immediate/Delayed)** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** No information available.

**Endocrine Disruptor Information** No information available

### **Section 12 – Ecological Information**

**Ecotoxicity:** Not applicable

**Persistence and Degradability:** No Information Available

**Mobility:** No Information Available

**Bioaccumulation/ Accumulation:** No Information Available

### **Section 13 – Disposal Considerations**

**Waste Disposal/Waste Disposal of Packaging:** Dilute with water and flush to sewer.

### **Section 14 – Transport Information**

**DOT – Not Regulated**

### **Section 15 – Regulatory Information (not meant to be all inclusive)**

**OSHA Status:** These chemicals are not considered hazardous by OSHA.

**Canada DSL:** These chemicals are on Canada's DSL list.

**TSCA:** The components of this solution are listed on the TSCA Inventory

**SARA Title III Section 313:** Not Applicable

**RCRA Status:** Not Applicable

**CERCLA Reportable Quantity:** Not Applicable

**WHMIS:** Not controlled.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

### **Section 16 – Additional Information**

**Disclaimer:** The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.