

# Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Page 1 of 6

## Benedict's Solution

### SECTION 1: Identification of the substance/mixture and of the supplier

**Product name:** Benedict's Solution

**Manufacturer/Supplier Trade name:**

**Manufacturer/Supplier Article number:** BS2200-AA

**Recommended uses of the product and restrictions on use:**

**Manufacturer Details:**

AquaPhoenix Scientific, Inc  
9 Barnhart Drive, Hanover, PA 17331  
(717) 632-1291

**Supplier Details:**

AquaPhoenix Scientific, Inc  
9 Barnhart Drive, Hanover, PA 17331  
(717) 632-1291

**Emergency telephone number:**

Emergency Telephone No.: 800-255-3924

### SECTION 2: Hazards identification

**Classification of the substance or mixture:** Not classified for physical or health hazards under GHS.

**Signal word:** None

**Hazard statements:** None

**Precautionary statements:**

If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Do not eat, drink or smoke when using this product.

**Other Non-GHS Classification:** None

### SECTION 3: Composition/information on ingredients

| Ingredients:              |                              |         |
|---------------------------|------------------------------|---------|
| CAS 7758-99-8             | Cupric Sulfate, Pentahydrate | 1.73 %  |
| CAS 7732-18-5             | Deionized Water              | 70.97 % |
| CAS 497-19-8              | Sodium Carbonate, Anhydrous  | 10 %    |
| CAS 6132-04-3             | Sodium Citrate, ACS          | 17.3 %  |
| Percentages are by weight |                              |         |

### SECTION 4: First aid measures

## Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Page 2 of 6

### Benedict's Solution

#### Description of first aid measures

##### After inhalation:

Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists.

##### After skin contact:

Wash affected area with soap and water. Rinse thoroughly. Seek medical attention if irritation, discomfort or vomiting persists.

##### After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

##### After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists.

#### Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath.

#### Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician.

### SECTION 5: Firefighting measures

#### Extinguishing media

##### Suitable extinguishing agents:

If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

##### Unsuitable extinguishing agents: None

#### Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors.

#### Advice for firefighters:

##### Protective equipment: None

##### Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.

### SECTION 6: Accidental release measures

#### Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

#### Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13.

#### Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Collect liquids using vacuum or by use of absorbents. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor.

#### Reference to other sections: None

## Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Page 3 of 6

### Benedict's Solution

#### SECTION 7: Handling and storage

##### Precautions for safe handling:

Prevent formation of aerosols. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid splashes or spray in enclosed areas.

##### Conditions for safe storage, including any incompatibilities:

Store in a cool location. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Keep container tightly sealed.

#### SECTION 8: Exposure controls/personal protection



##### Control Parameters:

No applicable occupational exposure limits.

##### Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

##### Respiratory protection:

Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.

##### Protection of skin:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

##### Eye protection:

Safety glasses with side shields or goggles.

##### General hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

#### SECTION 9: Physical and chemical properties

|                                            |                   |                                                 |                                                        |
|--------------------------------------------|-------------------|-------------------------------------------------|--------------------------------------------------------|
| <b>Appearance (physical state, color):</b> | Clear blue liquid | <b>Explosion limit lower:</b>                   | 0 Vol %                                                |
|                                            |                   | <b>Explosion limit upper:</b>                   | 0 Vol %                                                |
| <b>Odor:</b>                               | Odorless          | <b>Vapor pressure at 20°C:</b>                  | 2.3 kPa (@ 20°C) or 23 hPa (17 mm Hg) at 20 °C (68 °F) |
| <b>Odor threshold:</b>                     | Not determined    | <b>Vapor density:</b>                           | 0.62 (Air = 1)                                         |
| <b>pH-value:</b>                           | 10.6              | <b>Relative density:</b>                        | 1 (Water = 1)                                          |
| <b>Melting/Freezing point:</b>             | 0 °C (32 °F)      | <b>Solubilities:</b>                            | Infinite                                               |
| <b>Boiling point/Boiling range:</b>        | 100°C (212°F)     | <b>Partition coefficient (n-octanol/water):</b> | Not determined                                         |

## Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Page 4 of 6

### Benedict's Solution

|                                       |                                                      |                                        |                                                                         |
|---------------------------------------|------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------|
| <b>Flash point (closed cup):</b>      | Not applicable                                       | <b>Auto/Self-ignition temperature:</b> | Not determined                                                          |
| <b>Evaporation rate:</b>              | Not determined                                       | <b>Decomposition temperature:</b>      | Not determined                                                          |
| <b>Flammability (solid, gaseous):</b> | Not applicable                                       | <b>Viscosity:</b>                      | a. Kinematic: Not determined<br>b. Dynamic: 0.952 mPas at 20 °C (68 °F) |
| <b>Density at 20°C:</b>               | 1 g/cm <sup>3</sup> (8.345 lbs/gal) at 20 °C (68 °F) |                                        |                                                                         |

### SECTION 10: Stability and reactivity

**Reactivity:** None

**Chemical stability:**

No decomposition if used and stored according to specifications.

**Possible hazardous reactions:** None

**Conditions to avoid:**

Store away from oxidizing agents, strong acids or bases.

**Incompatible materials:**

Strong acids. Strong bases.

**Hazardous decomposition products:**

Carbon oxides (CO, CO<sub>2</sub>).

### SECTION 11: Toxicological information

**Acute Toxicity:**

**Oral:**

Copper Sulfate LD50 Rat: 300 mg/kg

Sodium Carbonate LD50 Rat: 4090 mg/kg

**Chronic Toxicity:** No additional information.

**Skin corrosion/irritation:** No additional information.

**Serious eye damage/irritation:** No additional information.

**Respiratory or skin sensitization:** No additional information.

**Carcinogenicity:** See section 15.

**Germ cell mutagenicity:** No additional information.

**Reproductive Toxicity:** No additional information.

**STOT-single and repeated exposure:** No additional information.

**Additional toxicological information:** No additional information.

### SECTION 12: Ecological information

**Ecotoxicity:** No additional information.

**Persistence and degradability:**

Readily degradable in the environment.

**Bioaccumulative potential:** No additional information.

**Mobility in soil:**

Aqueous solution has high mobility in soil.

**Other adverse effects:** No additional information.

## Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Page 5 of 6

### Benedict's Solution

#### SECTION 13: Disposal considerations

##### Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product.

#### SECTION 14: Transport information

##### US DOT

###### UN Number:

ADR, ADN, DOT, IMDG, IATA

Not Regulated.

###### Limited Quantity Exception:

None

###### Bulk:

**RQ (if applicable):** None

**Proper shipping Name:** Not Regulated.

**Hazard Class:** None

**Packing Group:** Not Regulated.

**Marine Pollutant (if applicable):** No additional information.

**Comments:** None

###### Non Bulk:

**RQ (if applicable):** None

**Proper shipping Name:** Not Regulated.

**Hazard Class:** None

**Packing Group:** Not Regulated.

**Marine Pollutant (if applicable):** No additional information.

**Comments:** None

#### SECTION 15: Regulatory information

##### United States (USA)

###### SARA Section 311/312 (Specific toxic chemical listings):

None of the ingredients are listed.

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

None of the ingredients are listed.

###### RCRA (hazardous waste code):

None of the ingredients are listed.

###### TSCA (Toxic Substances Control Act):

All ingredients are listed.

###### CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

7758-99-8 Cupric Sulfate Pentahydrate 10 lbs.

##### Proposition 65 (California):

###### Chemicals known to cause cancer:

None of the ingredients are listed.

###### Chemicals known to cause reproductive toxicity for females:

## Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Page 6 of 6

### Benedict's Solution

None of the ingredients are listed.

#### Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

#### Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

### Canada

#### Canadian Domestic Substances List (DSL):

All ingredients are listed.

### SECTION 16: Other information

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

**NFPA:** 2-0-0

**HMIS:** 0-0-0

**GHS Full Text Phrases:** None

#### Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.  
IATA International Air Transport Association.  
GHS Globally Harmonized System of Classification and Labelling of Chemicals.  
ACGIH American Conference of Governmental Industrial Hygienists.  
CAS Chemical Abstracts Service (division of the American Chemical Society).  
NFPA National Fire Protection Association (USA).  
HMIS Hazardous Materials Identification System (USA).  
WHMIS Workplace Hazardous Materials Information System (Canada).  
DNEL Derived No-Effect Level (REACH).  
PNEC Predicted No-Effect Concentration (REACH).  
CFR Code of Federal Regulations (USA).  
SARA Superfund Amendments and Reauthorization Act (USA).  
RCRA Resource Conservation and Recovery Act (USA).  
TSCA Toxic Substances Control Act (USA).  
NPRI National Pollutant Release Inventory (Canada).  
DOT US Department of Transportation.

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