

# Safety Data Sheet

## Benedict's Solution, Qualitative

**CAROLINA**<sup>®</sup>  
www.carolina.com

### Section 1 Product Description

**Product Name:** Benedict's Solution, Qualitative

**Recommended Use:** Science education applications

**Synonyms:** None known.

**Distributor:** Carolina Biological Supply Company  
2700 York Road, Burlington, NC 27215  
1-800-227-1150

**Chemical Information:** 800-227-1150 (8am-5pm (ET) M-F)

**Chemtrec:** 800-424-9300 (Transportation Spill Response 24 hours)

### Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

**WARNING**



Harmful if inhaled. Harmful to aquatic life.

**GHS Classification:**

Hazardous to the aquatic environment - Acute Category 3, Acute Toxicity - Inhalation Vapor Category 4

### Section 3 Composition / Information on Ingredients

| <u>Chemical Name</u>           | <u>CAS #</u> | <u>%</u> |
|--------------------------------|--------------|----------|
| Water                          | 7732-18-5    | 74.7     |
| Sodium Citrate, Dihydrate      | 6132-04-3    | 15.1     |
| Sodium Carbonate, Anhydrous    | 497-19-8     | 8.7      |
| Copper (II) Sulfate, 5-Hydrate | 7758-99-8    | 1.5      |

### Section 4 First Aid Measures

**Emergency and First Aid Procedures**

**Inhalation:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**Eyes:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Ingestion:** If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

### Section 5 Firefighting Procedures

**Extinguishing Media:** Use media suitable to extinguish surrounding fire.

**Fire Fighting Methods and Protection:** Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.

**Fire and/or Explosion Hazards:** Fire or excessive heat may produce hazardous decomposition products.

**Hazardous Combustion Products:** Carbon dioxide, Carbon monoxide

### Section 6 Spill or Leak Procedures

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## Steps to Take in Case Material Is Released or Spilled:

No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section 8 of this (M)SDS. Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

## Section 7 Handling and Storage

**Handling:** Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid contact with skin and eyes. Keep away from oxidizing materials and strong acids. Avoid contact with clothing. Do not breathe gas/fumes/vapor/spray. Harmful if swallowed. After contact with skin, wash immediately with plenty of water.

**Storage:** Keep container tightly closed in a cool, well-ventilated place.

**Storage Code:** Green - general chemical storage

## Section 8 Protection Information

| Chemical Name                  | ACGIH                                          |        | OSHA PEL |        |
|--------------------------------|------------------------------------------------|--------|----------|--------|
|                                | (TWA)                                          | (STEL) | (TWA)    | (STEL) |
| Sodium Citrate, Dihydrate      | N/A                                            | N/A    | N/A      | N/A    |
| Sodium Carbonate, Anhydrous    | N/A                                            | N/A    | N/A      | N/A    |
| Copper (II) Sulfate, 5-Hydrate | 1 mg/m <sup>3</sup> TWA (dust and mist, as Cu) | N/A    | N/A      | N/A    |

### Control Parameters

**Engineering Measures:** Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

**Personal Protective Equipment (PPE):** Lab coat, apron, eye wash, safety shower.

**Respiratory Protection:** No respiratory protection required under normal conditions of use.

**Respirator Type(s):** None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.

**Eye Protection:** Wear chemical splash goggles when handling this product. Have an eye wash station available.

**Skin Protection:** Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

**Gloves:** No information available

## Section 9 Physical Data

**Formula:** See Section 3

**Molecular Weight:** No data available

**Appearance:** Colorless Blue Liquid

**Odor:** None

**Odor Threshold:** No data available

**pH:** No data available

**Melting Point:** No data available

**Boiling Point:** Estimated 100 C 100 C

**Flash Point:** No data available

**Flammable Limits in Air:** No data available

**Vapor Pressure:** No data available

**Evaporation Rate (BuAc=1):** No data available

**Vapor Density (Air=1):** No data available

**Specific Gravity:** No data available

**Solubility in Water:** Soluble

**Log Pow (calculated):** No data available

**Autoignition Temperature:** No data available

**Decomposition Temperature:** No data available

**Viscosity:** No data available

**Percent Volatile by Volume:** No data available

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## Section 10

## Reactivity Data

|                                  |                                                                                                                                              |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reactivity:</b>               | Not generally reactive under normal conditions.                                                                                              |
| <b>Chemical Stability:</b>       | Stable under normal conditions.                                                                                                              |
| <b>Conditions to Avoid:</b>      | None known.                                                                                                                                  |
| <b>Incompatible Materials:</b>   | Water-reactive materials, Strong oxidizing agents, Hot Aluminum, Strong acids, Strong reducing agents, Hydroxylamine, Hypobromite, Magnesium |
| <b>Hazardous Polymerization:</b> | Will not occur                                                                                                                               |

## Section 11

## Toxicity Data

|                          |                                             |
|--------------------------|---------------------------------------------|
| <b>Symptoms (Acute):</b> | Alkalosis, Respiratory Irritation, Drooling |
| <b>Delayed Effects:</b>  | No data available                           |

### Acute Toxicity:

| Chemical Name                  | CAS Number | Oral LD50                                                    | Dermal LD50                     | Inhalation LC50                                                                                                              |
|--------------------------------|------------|--------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Water                          | 7732-18-5  | Oral LD50 Rat<br>90000 mg/kg                                 |                                 |                                                                                                                              |
| Sodium Citrate, Dihydrate      | 6132-04-3  | No data available                                            | No data available               | No data available                                                                                                            |
| Sodium Carbonate, Anhydrous    | 497-19-8   | Oral LD50 Rat<br>4090 mg/kg<br>Oral LD50 Mouse<br>6600 mg/kg |                                 | INHALATION<br>LC50 Rat 2300<br>MG/M3<br>INHALATION<br>LC50 Mouse 1200<br>MG/M3<br>INHALATION<br>LC50 GUINEA PIG<br>800 MG/M3 |
| Copper (II) Sulfate, 5-Hydrate | 7758-99-8  | Oral LD50 Rat =<br>300 mg/kg                                 | Dermal LD50 Rat<br>> 2000 mg/kg |                                                                                                                              |

### Carcinogenicity:

| Chemical Name             | CAS Number | IARC       | NTP        | OSHA       |
|---------------------------|------------|------------|------------|------------|
| Sodium Citrate, Dihydrate | 6132-04-3  | Not listed | Not listed | Not listed |

### Chronic Effects:

|                              |                                                     |
|------------------------------|-----------------------------------------------------|
| <b>Mutagenicity:</b>         | No evidence of a mutagenic effect.                  |
| <b>Teratogenicity:</b>       | No evidence of a teratogenic effect (birth defect). |
| <b>Sensitization:</b>        | No evidence of a sensitization effect.              |
| <b>Reproductive:</b>         | No evidence of negative reproductive effects.       |
| <b>Target Organ Effects:</b> |                                                     |
| <b>Acute:</b>                | No information available                            |
| <b>Chronic:</b>              | No data available                                   |

## Section 12

## Ecological Data

|                               |                                                                                                            |
|-------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Overview:</b>              | Slight ecological hazard. In high concentrations, this product may be dangerous to plants and/or wildlife. |
| <b>Mobility:</b>              | No data                                                                                                    |
| <b>Persistence:</b>           | Dissolved into water, Adsorbs to soil., Chemically Transformed                                             |
| <b>Bioaccumulation:</b>       | No data                                                                                                    |
| <b>Degradability:</b>         | No data                                                                                                    |
| <b>Other Adverse Effects:</b> | No data                                                                                                    |

| Chemical Name             | CAS Number | Eco Toxicity      |
|---------------------------|------------|-------------------|
| Water                     | 7732-18-5  | No data available |
| Sodium Citrate, Dihydrate | 6132-04-3  | Not available     |

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|                                |           |                                                                                                                         |
|--------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------|
| Sodium Carbonate, Anhydrous    | 497-19-8  | 96 HR LC50 LEPOMIS MACROCHIRUS 300 MG/L [STATIC]<br>48 HR EC50 DAPHNIA MAGNA 265 MG/L<br>120 HR EC50 NITZSCHIA 242 MG/L |
| Copper (II) Sulfate, 5-Hydrate | 7758-99-8 | 96 HR LC50 PIMEPHALES PROMELAS 0.6752 MG/L [STATIC]                                                                     |

## Section 13

## Disposal Information

|                                |                                                                                                                                                       |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Disposal Methods:</b>       | Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance. |
| <b>Waste Disposal Code(s):</b> | Not Determined                                                                                                                                        |

## Section 14

## Transport Information

|                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Ground - DOT Proper Shipping Name:</b><br>Not regulated for transport by US DOT. | <b>Air - IATA Proper Shipping Name:</b><br>Not regulated for air transport by IATA. |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

## Section 15

## Regulatory Information

**TSCA Status:** All components in this product are on the TSCA Inventory.

| Chemical Name                  | CAS Number | § 313 Name | § 304 RQ | CERCLA RQ | § 302 TPQ | CAA 112(2) TQ |
|--------------------------------|------------|------------|----------|-----------|-----------|---------------|
| Sodium Citrate, Dihydrate      | 6132-04-3  | No         | No       | No        | No        | No            |
| Sodium Carbonate, Anhydrous    | 497-19-8   | No         | No       | No        | No        | No            |
| Copper (II) Sulfate, 5-hydrate | 7758-99-8  | No         | No       | No        | No        | No            |

**California Prop 65:** No California Proposition 65 ingredients

## Section 16

## Additional Information

**Revised: 08/21/2018**

**Replaces: 06/15/2018**

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The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

### Glossary

|        |                                                                       |      |                                               |
|--------|-----------------------------------------------------------------------|------|-----------------------------------------------|
| ACGIH  | American Conference of Governmental Industrial Hygienists             | NTP  | National Toxicology Program                   |
| CAS    | Chemical Abstract Service Number                                      | OSHA | Occupational Safety and Health Administration |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act | PEL  | Permissible Exposure Limit                    |
| DOT    | U.S. Department of Transportation                                     | ppm  | Parts per million                             |
| IARC   | International Agency for Research on Cancer                           | RCRA | Resource Conservation and Recovery Act        |
| N/A    | Not Available                                                         | SARA | Superfund Amendments and Reauthorization Act  |
|        |                                                                       | TLV  | Threshold Limit Value                         |
|        |                                                                       | TSCA | Toxic Substances Control Act                  |
|        |                                                                       | IDLH | Immediately dangerous to life and health      |