Material Safety Data Sheet
Benedict's Qualitative Solution

ACC# 75022

Section 1 - Chemical Product and Company Identification

MSDS Name: Benedict's Qualitative Solution
Catalog Numbers: LC11650
Synonyms:
Company Identification:
Labchem Inc.
200 William Pitt Way
Pittsburgh, PA 15238
For information, call: 412-826-5230
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5968-11-6</td>
<td>Sodium carbonate monohydrate</td>
<td>10</td>
<td>unlisted</td>
</tr>
<tr>
<td>6132-04-3</td>
<td>Sodium citrate, dihydrate</td>
<td>15</td>
<td>unlisted</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>balance</td>
<td>231-791-2</td>
</tr>
<tr>
<td>7758-99-8</td>
<td>Copper (ii) sulfate pentahydrate (1:1:5)</td>
<td>1.5</td>
<td>unlisted</td>
</tr>
</tbody>
</table>

Hazard Symbols: None listed.
Risk Phrases: None listed.

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: blue. Caution! May cause respiratory tract irritation. May cause skin irritation. May cause eye irritation.
Target Organs: None known.

Potential Health Effects
Eye: May cause eye irritation. May cause conjunctivitis.
Skin: May cause skin irritation.
Ingestion: Abdominal pain, vomiting, hematemesis, diarrhea, coma, death may occur on ingestion of large quantities. May cause nausea, vomiting, abdominal pain, diarrhea with blood.
Inhalation: May cause irritation of the upper respiratory tract and nasal membranes, coughing, sore throat, and possibly pulmonary edema.
**Chronic:** Individuals with Wilson's disease are unable to metabolize copper. Thus, copper accumulates in various tissues and may result in liver, kidney, and brain damage. May cause dermatitis and conjunctivitis. Prolonged intake could impair calcium and iron absorption.

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**Section 4 - First Aid Measures**

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once.

**Skin:** Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes.

**Ingestion:** Give conscious victim water or milk immediately to dilute alkali, allowing vomiting to occur. Do not use gastric lavage or emesis if tissue corrosion has occurred. If vomiting occurs, keep head lower than hips to prevent aspiration. Treat for shock, maintain airway and blood pressure. Examine victim for corrosive injury to mouth or throat. If necessary, irrigate with 1% acetic acid until alkali is neutralized.

**Inhalation:** Give artificial respiration if necessary. Get medical aid. Keep victim warm, at rest. Move victim to fresh air.

**Notes to Physician:** Treat symptomatically and supportively.

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**Section 5 - Firefighting Measures**

**General Information:** Negligible fire and explosion hazard when exposed to heat or flame. Move container if possible, avoid breathing vapors or dust.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

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**Section 6 - Accidental Release Measures**

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spills with absorbent (vermiculite, sand, fuller's earth) and place in plastic bags for later disposal.

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**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Avoid breathing dust, vapor, mist, or gas.

**Storage:** Store capped at room temperature. Protect from heat and incompatibles.

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**Section 8 - Exposure Controls, Personal Protection**
Engineering Controls: Provide local exhaust or general dilution ventilation.

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium carbonate monohydrate</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Sodium citrate, dihydrate</td>
<td>none listed</td>
<td>none listed</td>
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<td>Water</td>
<td>none listed</td>
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<tr>
<td>Copper (ii) sulfate pentahydrate (1:1:5)</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Sodium carbonate monohydrate: No OSHA Vacated PELs are listed for this chemical. Sodium citrate, dihydrate: No OSHA Vacated PELs are listed for this chemical. Water: No OSHA Vacated PELs are listed for this chemical. Copper (ii) sulfate pentahydrate (1:1:5): No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear splash-proof safety goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Firefighting-- any self-contained breathing apparatus with full facepiece operated in pressure-demand mode. High levels- supplied-air respirator with full facepiece, helmet, or hood.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid
Appearance: blue
Odor: odorless
pH: alkaline
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: < ether
Viscosity: Not available.
Boiling Point: 212 deg F
Freezing/Melting Point: 32 deg F
Decomposition Temperature: Not available.
Autoignition Temperature: Not available.
Flash Point: Not available.
NFPA Rating: Not published.
Explosion Limits, Lower: Not available.
Upper: Not available.
Solubility: Soluble.
Specific Gravity/Density: 1.2
Molecular Formula: Not available.
Molecular Weight: Not available.

Section 10 - Stability and Reactivity
**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Heating to decomposition.

**Incompatibilities with Other Materials:** Not available.

**Hazardous Decomposition Products:** Oxides of carbon, toxic fumes of sodium.

**Hazardous Polymerization:** Has not been reported

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**Section 11 - Toxicological Information**

**RTECS#:**

- CAS# 5968-11-6 unlisted.
- CAS# 6132-04-3 unlisted.
- CAS# 7732-18-5 unlisted.
- CAS# 7758-99-8 unlisted.

**LD50/LC50:**

- Not available.
- Not available.

CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;

CAS# 7758-99-8:
Oral, rat: LD50 = 300 mg/kg;

**Carcinogenicity:**

- CAS# 5968-11-6: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
- CAS# 6132-04-3: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
- CAS# 7732-18-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
- CAS# 7758-99-8: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

**Epidemiology:** No data available.

**Teratogenicity:** No data available.

**Reproductive Effects:** No data available.

**Neurotoxicity:** No data available.

**Mutagenicity:** No data available.

**Other Studies:** No data available.

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**Section 12 - Ecological Information**

No information available.

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**Section 13 - Disposal Considerations**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.
Section 14 - Transport Information

<table>
<thead>
<tr>
<th>US DOT</th>
<th>IATA</th>
<th>RID/ADR</th>
<th>IMO</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>No information available.</td>
<td></td>
<td></td>
<td></td>
<td>No information available.</td>
</tr>
</tbody>
</table>

Shipping Name: No information available.

Hazard Class: No information available.

Section 15 - Regulatory Information

**US FEDERAL**

**TSCA**
CAS# 5968-11-6 is not on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements (40CFR720.3(u)(2)).
CAS# 6132-04-3 is not listed on the TSCA inventory. It is for research and development use only.
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 7758-99-8 is not on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements (40CFR720.3(u)(2)).

**Health & Safety Reporting List**
None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**
None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**
None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**
None of the chemicals in this material have a SNUR under TSCA.

**SARA**

**Section 302 (RQ)**
None of the chemicals in this material have an RQ.

**Section 302 (TPQ)**
None of the chemicals in this product have a TPQ.

**SARA Codes**
CAS # 5968-11-6: acute. CAS # 7758-99-8: acute, chronic.

**Section 313**
This material contains Copper (ii) sulfate pentahydrate (1:1:5) (listed as **undefined **), 1 5%, (CAS# 7758-99-8) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**
This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

**Clean Water Act:**
None of the chemicals in this product are listed as Hazardous Substances under the CWA. None
of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**
None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**
CAS# 5968-11-6 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 6132-04-3 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 7758-99-8 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**
Not available.

**Risk Phrases:**

**Safety Phrases:**

**WGK (Water Danger/Protection)**
- CAS# 5968-11-6: 1
- CAS# 6132-04-3: 0
- CAS# 7732-18-5: No information available.
- CAS# 7758-99-8: 2

**Canada**

CAS# 7732-18-5 is listed on Canada's DSL List. CAS# 7758-99-8 is not listed on Canada's DSL List.

**WHMIS:** Not available.

CAS# 5968-11-6 is not listed on Canada's Ingredient Disclosure List.
CAS# 6132-04-3 is not listed on Canada's Ingredient Disclosure List.
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
CAS# 7758-99-8 is not listed on Canada's Ingredient Disclosure List.

**Exposure Limits**

CAS# 7758-99-8: OEL-ARAB Republic of Egypt: TWA 0.1 mg(Cu)/m3 (fume)
OEL-AUSTRALIA: TWA 0.2 mg(Cu)/m3 (fume) OEL-AUSTRALIA: TWA 1 mg(Cu)/m3 (dust)
OEL-BELGIUM: TWA 0.2 mg(Cu)/m3 (fume) OEL-BELGIUM: TWA 1 mg(Cu)/m3 (dust)
OEL-DENMARK: TWA 0.1 mg(Cu)/m3 (fume) OEL-DENMARK: TWA 1 mg(Cu)/m3 (dust)
OEL-FINLAND: TWA 0.2 mg(Cu)/m3 (fume) OEL-FINLAND: TWA 1 mg(Cu)/m3 (dust)
OEL-GERMANY: TWA 0.1 mg(Cu)/m3 (fume) OEL-GERMANY: TWA 1 mg(Cu)/m3 (dust)
OEL-HUNGARY: TWA 0.2 mg(Cu)/m3; STEL 0.4 mg(Cu)/m3 (fume) OEL-THE NETHERLANDS: TWA 0.2 mg(Cu)/m3 (fume) OEL-THE NETHERLANDS: TWA 1 mg(Cu)/m3 (dust)
OEL-THE PHILIPPINES: TWA 1.0 mg(Cu)/m3 (fume) JAN9 OEL-Poland: TWA 0.1 mg(Cu)/m3 (fume) OEL-RUSSIA: STEL 0.5 ppm (1 mg(Cu)/m3) (dust) JAN9 OEL-SWEDEN: TWA 0.2 mg(Cu)/m3 (resp. dust) OEL-SWEDEN: TWA 0.2 mg(Cu)/m3 (fume) OEL-SWITZERLAND: TWA 0.1 mg(Cu)/m3 (fume) OEL-SWITZERLAND: TWA 1 mg(Cu)/m3 (dust)
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STELE 1.0 mg(Cu)/m3; STEL 1 mg(Cu)/m3 OEL-THAILAND: TWA 0.1 mg(Cu)/m3 (fume) OEL-THAILAND: TWA 1 mg(Cu)/m3 OEL-U
**MSDS Creation Date:** 10/21/1997  
**Revision #1 Date:** 12/06/2000  

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