

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Benedict Qualitative Solution  
Product code : LC11650

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : For laboratory and manufacturing use only.

#### 1.3. Details of the supplier of the safety data sheet

LabChem Inc  
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court  
Zelienople, PA 16063 - USA  
T 412-826-5230 - F 724-473-0647  
[info@labchem.com](mailto:info@labchem.com) - [www.labchem.com](http://www.labchem.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Skin corrosion/irritation Category 2 H315  
Serious eye damage/eye irritation Category 2A H319  
Hazardous to the aquatic environment - Acute Hazard Category 3 H402  
Hazardous to the aquatic environment - Chronic Hazard Category 3 H412

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

P264 - Wash exposed skin thoroughly after handling  
P273 - Avoid release to the environment  
P280 - Wear eye protection, protective gloves  
P302+P352 - IF ON SKIN: Wash with plenty of soap and water  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P337+P313 - If eye irritation persists: Get medical advice/attention  
P362 - Take off contaminated clothing and wash it before reuse  
P501 - Dispose of contents/container to comply with local, state and federal regulations

#### 2.3. Other hazards

Other hazards not contributing to the classification : None.

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substance

Not applicable

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### 3.2. Mixture

| Name                              | Product identifier | %     | GHS-US classification                                                         |
|-----------------------------------|--------------------|-------|-------------------------------------------------------------------------------|
| Water                             | (CAS No) 7732-18-5 | 70.97 | Not classified                                                                |
| Sodium Citrate, Dihydrate         | (CAS No) 6132-04-3 | 17.3  | Not classified                                                                |
| Sodium Carbonate, Anhydrous       | (CAS No) 497-19-8  | 10    | Skin Irrit. 2, H315<br>Eye Irrit. 2A, H319                                    |
| Copper (II) Sulfate, Pentahydrate | (CAS No) 7758-99-8 | 1.73  | Acute Tox. 3 (Oral), H301<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Coughing.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye irritation.
- Symptoms/injuries after ingestion : Nausea. Vomiting. Low arterial pressure. Enlargement/disease of the liver.
- Chronic symptoms : Dry skin. Possible inflammation of the respiratory tract.

### 4.3. Indication of any immediate medical attention and special treatment needed

None.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not flammable.
- Explosion hazard : Not applicable.
- Reactivity : None.

### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
- Other information : Not applicable.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Isolate from fire, if possible, without unnecessary risk.

#### 6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

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### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Hygiene measures : Wash exposed skin thoroughly after handling.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Sodium Citrate, Dihydrate (6132-04-3)

Not applicable

#### Sodium Carbonate, Anhydrous (497-19-8)

Not applicable

#### Copper (II) Sulfate, Pentahydrate (7758-99-8)

Not applicable

#### Water (7732-18-5)

Not applicable

### 8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal protective equipment : Safety glasses. Gloves.



Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Respiratory protection not required in normal conditions.

Consumer exposure controls : Avoid contact during pregnancy/while nursing.

Other information : Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color : Blue

Odor : odorless

Odor threshold : No data available

pH : 9 - 11 (25°C)

Melting point : No data available

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|                                             |                      |
|---------------------------------------------|----------------------|
| Freezing point                              | : No data available  |
| Boiling point                               | : No data available  |
| Flash point                                 | : No data available  |
| Relative evaporation rate (butyl acetate=1) | : No data available  |
| Flammability (solid, gas)                   | : Non flammable.     |
| Vapor pressure                              | : No data available  |
| Relative vapor density at 20 °C             | : No data available  |
| Relative density                            | : No data available  |
| Solubility                                  | : No data available  |
| Log Pow                                     | : No data available  |
| Auto-ignition temperature                   | : No data available  |
| Decomposition temperature                   | : No data available  |
| Viscosity, kinematic                        | : No data available  |
| Viscosity, dynamic                          | : No data available  |
| Explosion limits                            | : No data available  |
| Explosive properties                        | : No data available. |
| Oxidizing properties                        | : No data available. |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

None.

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong acids. Strong bases.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Likely routes of exposure : Skin and eye contact

Acute toxicity : Not classified

| Sodium Citrate, Dihydrate (6132-04-3)         |                                                                                               |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------|
| LD50 oral rat                                 | 6730 mg/kg                                                                                    |
| ATE US (oral)                                 | 6730.000 mg/kg body weight                                                                    |
| Sodium Carbonate, Anhydrous (497-19-8)        |                                                                                               |
| LD50 oral rat                                 | 4090 mg/kg                                                                                    |
| ATE US (oral)                                 | 4090.000 mg/kg body weight                                                                    |
| Copper (II) Sulfate, Pentahydrate (7758-99-8) |                                                                                               |
| LD50 oral rat                                 | 300 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 482 mg/kg bodyweight; Rat) |
| LD50 dermal rabbit                            | > 2000 mg/kg (Rabbit; Literature study; OECD 402: Acute Dermal Toxicity)                      |
| ATE US (oral)                                 | 300.000 mg/kg body weight                                                                     |
| Water (7732-18-5)                             |                                                                                               |
| LD50 oral rat                                 | ≥ 90000 mg/kg                                                                                 |

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| <b>Water (7732-18-5)</b>                            |                                                                                      |
|-----------------------------------------------------|--------------------------------------------------------------------------------------|
| ATE US (oral)                                       | 90000.000 mg/kg body weight                                                          |
| Skin corrosion/irritation                           | : Causes skin irritation.<br>pH: 9 - 11 (25°C)                                       |
| Serious eye damage/irritation                       | : Causes serious eye irritation.<br>pH: 9 - 11 (25°C)                                |
| Respiratory or skin sensitization                   | : Not classified                                                                     |
| Germ cell mutagenicity                              | : Not classified<br>Based on available data, the classification criteria are not met |
| Carcinogenicity                                     | : Not classified                                                                     |
| Reproductive toxicity                               | : Not classified<br>Based on available data, the classification criteria are not met |
| Specific target organ toxicity (single exposure)    | : Not classified                                                                     |
| Specific target organ toxicity (repeated exposure)  | : Not classified                                                                     |
| Aspiration hazard                                   | : Not classified                                                                     |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                  |
| Symptoms/injuries after inhalation                  | : Coughing.                                                                          |
| Symptoms/injuries after skin contact                | : Causes skin irritation.                                                            |
| Symptoms/injuries after eye contact                 | : Causes serious eye irritation.                                                     |
| Symptoms/injuries after ingestion                   | : Nausea. Vomiting. Low arterial pressure. Enlargement/disease of the liver.         |
| Chronic symptoms                                    | : Dry skin. Possible inflammation of the respiratory tract.                          |

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water : Harmful to aquatic life with long lasting effects.

| <b>Benedict Qualitative Solution</b>                 |                                                                                                                                            |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| EC50 Daphnia 1                                       | 13.8 mg/l                                                                                                                                  |
| <b>Sodium Citrate, Dihydrate (6132-04-3)</b>         |                                                                                                                                            |
| EC50 Daphnia 1                                       | 655 - 825.9 mg/l                                                                                                                           |
| <b>Sodium Carbonate, Anhydrous (497-19-8)</b>        |                                                                                                                                            |
| LC50 fish 1                                          | 300 mg/l                                                                                                                                   |
| EC50 Daphnia 1                                       | 265 mg/l                                                                                                                                   |
| LC50 fish 2                                          | 740 mg/l                                                                                                                                   |
| <b>Copper (II) Sulfate, Pentahydrate (7758-99-8)</b> |                                                                                                                                            |
| Threshold limit algae 2                              | 0.368 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Read-across) |

### 12.2. Persistence and degradability

| <b>Benedict Qualitative Solution</b>                 |                                                         |
|------------------------------------------------------|---------------------------------------------------------|
| Persistence and degradability                        | May cause long-term adverse effects in the environment. |
| <b>Sodium Citrate, Dihydrate (6132-04-3)</b>         |                                                         |
| Persistence and degradability                        | Not established.                                        |
| <b>Sodium Carbonate, Anhydrous (497-19-8)</b>        |                                                         |
| Persistence and degradability                        | Not established.                                        |
| <b>Copper (II) Sulfate, Pentahydrate (7758-99-8)</b> |                                                         |
| Persistence and degradability                        | Not established.                                        |
| Biochemical oxygen demand (BOD)                      | Not applicable                                          |

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| <b>Copper (II) Sulfate, Pentahydrate (7758-99-8)</b> |                |
|------------------------------------------------------|----------------|
| Chemical oxygen demand (COD)                         | Not applicable |
| ThOD                                                 | Not applicable |

| <b>Water (7732-18-5)</b>      |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| <b>Benedict Qualitative Solution</b> |                  |
|--------------------------------------|------------------|
| Bioaccumulative potential            | Not established. |

| <b>Sodium Citrate, Dihydrate (6132-04-3)</b> |                  |
|----------------------------------------------|------------------|
| Bioaccumulative potential                    | Not established. |

| <b>Sodium Carbonate, Anhydrous (497-19-8)</b> |                  |
|-----------------------------------------------|------------------|
| Bioaccumulative potential                     | Not established. |

| <b>Copper (II) Sulfate, Pentahydrate (7758-99-8)</b> |                                |
|------------------------------------------------------|--------------------------------|
| Bioaccumulative potential                            | Bioaccumable. Not established. |

| <b>Water (7732-18-5)</b>  |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |

### 12.4. Mobility in soil

| <b>Copper (II) Sulfate, Pentahydrate (7758-99-8)</b> |                 |
|------------------------------------------------------|-----------------|
| Ecology - soil                                       | Toxic to flora. |

### 12.5. Other adverse effects

|                              |                                       |
|------------------------------|---------------------------------------|
| Effect on the global warming | : No known effects from this product. |
| GWPmix comment               | : No known effects from this product. |
| Other information            | : Avoid release to the environment.   |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                |                                                                                                                                                              |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations. |
| Ecology - waste materials      | : Avoid release to the environment.                                                                                                                          |

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT  
Not regulated

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| <b>Benedict Qualitative Solution</b>                                      |  |
|---------------------------------------------------------------------------|--|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |  |

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

|                                   |                  |       |
|-----------------------------------|------------------|-------|
| Copper (II) Sulfate, Pentahydrate | CAS No 7758-99-8 | 1.73% |
|-----------------------------------|------------------|-------|

| <b>Copper (II) Sulfate, Pentahydrate (7758-99-8)</b>         |       |
|--------------------------------------------------------------|-------|
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 10 lb |

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### 15.2. International regulations

#### CANADA

|                                                       |                                                                                               |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Benedict Qualitative Solution</b>                  |                                                                                               |
| Listed on the Canadian DSL (Domestic Substances List) |                                                                                               |
| WHMIS Classification                                  | Class D Division 2 Subdivision B - Toxic material causing other toxic effects                 |
| <b>Sodium Citrate, Dihydrate (6132-04-3)</b>          |                                                                                               |
| Listed on the Canadian DSL (Domestic Substances List) |                                                                                               |
| WHMIS Classification                                  | Uncontrolled product according to WHMIS classification criteria                               |
| <b>Sodium Carbonate, Anhydrous (497-19-8)</b>         |                                                                                               |
| Listed on the Canadian DSL (Domestic Substances List) |                                                                                               |
| WHMIS Classification                                  | Class D Division 2 Subdivision B - Toxic material causing other toxic effects                 |
| <b>Copper (II) Sulfate, Pentahydrate (7758-99-8)</b>  |                                                                                               |
| Listed on the Canadian DSL (Domestic Substances List) |                                                                                               |
| WHMIS Classification                                  | Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects |
| <b>Water (7732-18-5)</b>                              |                                                                                               |
| WHMIS Classification                                  | Uncontrolled product according to WHMIS classification criteria                               |

#### EU-Regulations

No additional information available

#### National regulations

|                                                             |  |
|-------------------------------------------------------------|--|
| <b>Benedict Qualitative Solution</b>                        |  |
| Listed on the Canadian IDL (Ingredient Disclosure List)     |  |
| <b>Sodium Citrate, Dihydrate (6132-04-3)</b>                |  |
| Not listed on the Canadian IDL (Ingredient Disclosure List) |  |
| <b>Sodium Carbonate, Anhydrous (497-19-8)</b>               |  |
| Listed on the Canadian IDL (Ingredient Disclosure List)     |  |
| <b>Copper (II) Sulfate, Pentahydrate (7758-99-8)</b>        |  |
| Listed on the Canadian IDL (Ingredient Disclosure List)     |  |

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16: Other information

Revision date : 12/14/2016

Other information : None.

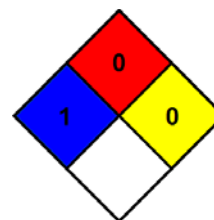
Full text of H-phrases: see section 16:

|      |                                                      |
|------|------------------------------------------------------|
| H301 | Toxic if swallowed                                   |
| H315 | Causes skin irritation                               |
| H319 | Causes serious eye irritation                        |
| H400 | Very toxic to aquatic life                           |
| H402 | Harmful to aquatic life                              |
| H410 | Very toxic to aquatic life with long lasting effects |
| H412 | Harmful to aquatic life with long lasting effects    |

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



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### HMIS III Rating

|                     |                                                                                                                                                                                     |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Health              | : 1 Slight Hazard - Irritation or minor reversible injury possible                                                                                                                  |
| Flammability        | : 0 Minimal Hazard - Materials that will not burn                                                                                                                                   |
| Physical            | : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives. |
| Personal protection | : B<br>B - Safety glasses, Gloves                                                                                                                                                   |

### SDS US LabChem

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