

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixtures  
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  
16063 Zelenople, PA - 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: Hazards identification

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

##### Classification (GHS-US)

Skin Irrit. 2 H315  
Eye Irrit. 2A H319  
Aquatic Acute 3 H402  
Aquatic Chronic 3 H412

#### 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  
H402 - Harmful to aquatic life  
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  
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)

No data available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

Full text of H-phrases: see section 16

#### 3.2. Mixtures

Name	Product identifier	%	Classification (GHS-US)
Water	(CAS No) 7732-18-5	70.97	Not classified

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Name	Product identifier	%	Classification (GHS-US)
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 Eye Irrit. 2A, H319
Copper(II) sulfate, pentahydrate	(CAS No) 7758-99-8	1.73	Acute Tox. 3 (Oral), H301 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

### 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	: Assure fresh air breathing. 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/affection 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. Avoid (reject) fire-fighting water to enter 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.
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##### 6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
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##### 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.

#### 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.
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#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

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### 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.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

#### 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 : Avoid all unnecessary exposure.
- Hand protection : Wear protective gloves.
- Eye protection : Chemical goggles or safety glasses.
- Skin and body protection : Wear suitable protective clothing.
- Respiratory protection : Wear appropriate mask.
- 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)
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Self ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- 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
- Log Kow : No data available
- Viscosity, kinematic : No data available
- Viscosity, dynamic : No data available
- Explosive properties : No data available.
- Oxidizing properties : No data available.
- Explosive limits : No data available

#### 9.2. Other information

No additional information available

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### 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

Acute toxicity : Not classified

Sodium Citrate Dihydrate (6132-04-3)	
LD50 oral rat	6730 mg/kg
Sodium Carbonate Anhydrous (497-19-8)	
LD50 oral rat	4090 mg/kg
Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg
Copper(II) sulfate, pentahydrate (7758-99-8)	
LD50 oral rat	300 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

Skin corrosion/irritation	: Causes skin irritation. pH: 9 - 11 (25°C)
Serious eye damage/irritation	: Causes serious eye irritation. pH: 9 - 11 (25°C)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classifiedBased on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classifiedBased on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classifiedBased on available data, the classification criteria are not met
Aspiration hazard	: Not classifiedBased on available data, the classification criteria are not met
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/affection 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.

Benedict Qualitative Solution	
EC50 Daphnia 1	13.8 mg/l
Sodium Citrate Dihydrate (6132-04-3)	
EC50 Daphnia 1	655 - 825.9 mg/l

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<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>	
LC50 fish 1	1.5 mg/l (24 h; Lepomis macrochirus; TOXICITY TEST)
LC50 fish 2	0.17 mg/l 24 h; Salmo gairdneri (Oncorhynchus mykiss)
TLM fish 1	3.8 ppm (24 h; Salmo gairdneri (Oncorhynchus mykiss); Fresh water)

### 12.2. Persistence and degradability

<b>Benedict Qualitative Solution</b>	
Persistence and degradability	May cause long-term adverse effects in the environment.

<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
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

### 12.3. Bioaccumulative potential

<b>Benedict Qualitative Solution</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.

### 12.4. Mobility in soil

<b>Copper(II) sulfate, pentahydrate (7758-99-8)</b>	
Ecology - soil	Toxic to flora.

### 12.5. Other adverse effects

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

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

### 14.1. UN number

Not applicable

### 14.2. UN proper shipping name

Not applicable

### 14.3. Additional information

Other information : No supplementary information available.

### Overland transport

No additional information available

### Transport by sea

No additional information available

### Air transport

No additional information available

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### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Benedict Qualitative Solution

Listed on the United States TSCA (Toxic Substances Control Act) inventory

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

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Copper(II) sulfate, pentahydrate (7758-99-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on SARA Section 313 (Specific toxic chemical listings)

RQ (Reportable quantity, section 304 of EPA's List of Lists) :	10 lb
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#### 15.2. International regulations

##### CANADA

##### Benedict Qualitative Solution

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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##### Sodium Carbonate Anhydrous (497-19-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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##### Copper(II) sulfate, pentahydrate (7758-99-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects
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#### EU-Regulations

No additional information available

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

#### Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

#### 15.2.2. National regulations

##### Benedict Qualitative Solution

Listed on the Canadian Ingredient Disclosure List

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

Listed on the Canadian Ingredient Disclosure List

##### Copper(II) sulfate, pentahydrate (7758-99-8)

Listed on the Canadian Ingredient Disclosure List

#### 15.3. US State regulations

##### Copper(II) sulfate, pentahydrate (7758-99-8)

U.S. - California - Priority Toxic Pollutants - Freshwater Criteria

### SECTION 16: Other information

Indication of changes : Revision - See : \*

Other information : None.

Full text of H-phrases: see section 16:

Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1

# Benedict Qualitative Solution

## Safety Data Sheet

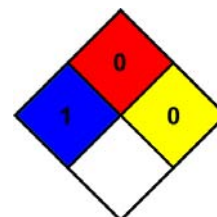
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Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Skin Irrit. 2	skin corrosion/irritation Category 2
H301	Toxic if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H400	Very toxic 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.



### HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

Personal Protection : B

SDS US (GHS HazCom 2012)

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