

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.06.2017

Page 1 of 9

Revision date: 12.08.2017

Benedict's Solution

SECTION 1: Identification

Product identifier

Product name: Benedict's Solution

Product code: KEMBS2200-C

Recommended use of the product and restriction on use

Relevant identified uses: Not determined or not applicable.

Uses advised against: Not determined or not applicable.

Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Manufacturer:

Supplier:

AquaPhoenix Scientific
860 Gitts Run Road
Hanover
PA 17331
(717) 632-1291

AquaPhoenix Scientific Inc.
860 Gitts Run Road
Hanover
PA 17331
(717) 632-1291

Emergency telephone number:

United States

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazard(s) identification

GHS classification:

Eye irritation, category 2A

Chronic aquatic hazard, category 3

Label elements

Hazard pictograms:



Signal word: Warning

Hazard statements:

H319 Causes serious eye irritation

H315 Causes skin irritation

H412 Harmful to aquatic life with long lasting effects

Precautionary statements:

P264 Wash skin thoroughly after handling

P280 Wear protective gloves/protective clothing/eye protection/face protection

P273 Avoid release to the environment

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

P321 Specific treatment (see supplemental first aid instructions on this label).

P362 Take off contaminated clothing and wash before reuse

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.06.2017

Page 2 of 9

Revision date: 12.08.2017

Benedict's Solution

P302+P352 If on skin: Wash with soap and water

P332+P313 If skin irritation occurs: Get medical advice/attention

P501 Dispose of contents and container as instructed in Section 13

Hazards not otherwise classified: None

SECTION 3: Composition/information on ingredients

Identification	Name	Weight %
CAS number: 7758-99-8	Copper Sulfate, Pentahydrate	<2.5
CAS number: 7732-18-5	Water	<100
CAS number: 497-19-8	Sodium Carbonate, Anhydrous	>10
CAS number: 6132-04-3	Sodium Citrate	<100

Additional Information: None

SECTION 4: First aid measures

Description of first aid measures

General notes:

Not determined or not applicable.

After inhalation:

Loosen clothing as necessary and position individual in a comfortable position

Maintain an unobstructed airway

Get medical advice/attention if you feel unwell

After skin contact:

Rinse affected area with soap and water

If symptoms develop or persist, seek medical attention

Wash affected area with soap and water

Seek medical attention if symptoms develop or persist

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes

Remove contact lenses, if present and easy to do

Continue rinsing

Get medical advice/attention

Remove contact lens(es) if able to do so during rinsing

Seek medical attention if irritation persists or if concerned

After swallowing:

Rinse mouth and then drink plenty of water

Do not induce vomiting

Get medical advice/attention if you feel unwell

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Not determined or not applicable.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.06.2017

Page 3 of 9

Revision date: 12.08.2017

Benedict's Solution

Delayed symptoms and effects:

Not determined or not applicable.

Immediate medical attention and special treatment

Specific treatment:

Not determined or not applicable.

Notes for the doctor:

Not determined or not applicable.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition

Unsuitable extinguishing media:

Not determined or not applicable.

Specific hazards during fire-fighting:

Thermal decomposition can lead to release of irritating gases and vapors

Special protective equipment for firefighters:

Wear protective eye wear, gloves and clothing

Refer to Section 8

Use typical firefighting equipment, self-contained breathing apparatus, special tightly sealed suit

Special precautions:

Heating causes a rise in pressure, risk of bursting and combustion

Shut off sources of ignition

Carbon monoxide and carbon dioxide may form upon combustion

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation

Ensure air handling systems are operational

Wear protective eye wear, gloves and clothing

Environmental precautions:

Should not be released into the environment

Prevent from reaching drains, sewer or waterway

Methods and material for containment and cleaning up:

Absorb with non-combustible liquid-binding material (sand, diatomaceous earth (clay), acid binders, universal binders)

Dispose of contents / container in accordance with local regulations

Reference to other sections:

Not determined or not applicable.

SECTION 7: Handling and storage

Precautions for safe handling:

Do not eat, drink, smoke or use personal products when handling chemical substances.

Avoid breathing mist or vapor.

Use only with adequate ventilation.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.06.2017

Page 4 of 9

Revision date: 12.08.2017

Benedict's Solution

Conditions for safe storage, including any incompatibilities:

Store in a cool, well-ventilated area.
Store away from foodstuffs.

SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

Occupational Exposure limit values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
ACGIH	Copper Sulfate, Pentahydrate	7758-99-8	ACGIH TLV TWA 1.0 mg/m ³ , as Cu
United States (OSHA)	Copper Sulfate, Pentahydrate	7758-99-8	OSHA PEL TWA 1.0 mg/m ³ , as Cu

Biological limit values:

No biological exposure limits noted for the ingredient(s).

Information on monitoring procedures:

Not determined or not applicable.

Appropriate engineering controls:

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

Personal protection equipment

Eye and face protection:

Safety goggles or glasses, or appropriate eye protection.

Skin and body protection:

Select glove material impermeable and resistant to the substance.

Respiratory protection:

When necessary, use NIOSH-approved breathing equipment.

General hygienic measures:

Wash hands before breaks and at the end of work.
Avoid contact with skin, eyes and clothing.
Perform routine housekeeping.
Wash contaminated clothing before reusing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear, blue liquid
Odor	Odorless
Odor threshold	Not available
pH	10.6
Melting point/freezing point	0 °C (32 °F)
Initial boiling point/range	100 °C (212 °F)
Flash point (closed cup)	Not available
Evaporation rate	Not available
Flammability (solid, gas)	Not available

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.06.2017

Page 5 of 9

Revision date: 12.08.2017

Benedict's Solution

Upper flammability/explosive limit	0 Vol %
Lower flammability/explosive limit	0 Vol %
Vapor pressure	2.3 kPa (at 20°C) or 23 hPa (17 mm Hg) at 20 °C (68 °F)
Vapor density	0.62 (Air = 1)
Density	1 g/cm ³ (8.345 lbs/gal) at 20 °C (68 °F)
Relative density	1 (Water = 1)
Solubilities	Infinite solubility in water.
Partition coefficient (n-octanol/water)	Not available
Auto/Self-ignition temperature	Not available
Decomposition temperature	Not available
Dynamic viscosity	0.952 mPas at 20°C (68°F)
Kinematic viscosity	Not available
Explosive properties	Not available
Oxidizing properties	Not available

Other information

SECTION 10: Stability and reactivity

Reactivity:

Does not react under normal conditions of use and storage.

Chemical stability:

Stable under normal conditions of use and storage.

Possibility of hazardous reactions:

None under normal conditions of use and storage.

Conditions to avoid:

None known.

Incompatible materials:

None known.

Hazardous decomposition products:

None known.

SECTION 11: Toxicological information

Acute toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Route	Result
Copper Sulfate, Pentahydrate	oral	LD50 Oral - Rat - 300 mg/kg

Skin corrosion/irritation

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Result
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Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.06.2017

Page 6 of 9

Revision date: 12.08.2017

Benedict's Solution

Name	Result
Copper Sulfate, Pentahydrate	Causes skin irritation.

Serious eye damage/irritation

Assessment: Causes serious eye irritation

Product data: No data available.

Substance data:

Name	Result
Copper Sulfate, Pentahydrate	Causes serious eye irritation.
Sodium Carbonate, Anhydrous	Causes eye irritation

Respiratory or skin sensitization

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC): None of the ingredients are listed.

National Toxicology Program (NTP): None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Reproductive toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (single exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Information on likely routes of exposure: No data available.

Symptoms related to the physical, chemical and toxicological characteristics: No data available.

Other information: No data available.

SECTION 12: Ecological information

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.06.2017

Page 7 of 9

Revision date: 12.08.2017

Benedict's Solution

Acute (short-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Result
Copper Sulfate, Pentahydrate	EC50 - Daphnia magna - 182 ug/L - 48 h
	LC50 - Oncorhynchus mykiss - 32 ug/L - 96h
Sodium Carbonate, Anhydrous	LC50 - Lepomis macrochirus (Bluegill) - 300 mg/l - 96 h
	EC50 - Daphnia magna (Water flea) - 265 mg/l - 48 h

Chronic (long-term) toxicity

Product data: No data available.

Substance data: No data available.

Persistence and degradability

Product data: No data available.

Substance data: No data available.

Bioaccumulative potential

Product data: No data available.

Substance data: No data available.

Mobility in soil

Product data: No data available.

Substance data: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal methods:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11)

SECTION 14: Transport information

United States Transportation of dangerous goods (49 CFR DOT)

UN number	Not Regulated
UN proper shipping name	Not Regulated
UN transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None

International Maritime Dangerous Goods (IMDG)

UN number	Not Regulated
UN proper shipping name	Not Regulated
UN transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.06.2017

Page 8 of 9

Revision date: 12.08.2017

Benedict's Solution

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN number	Not Regulated
UN proper shipping name	Not Regulated
UN transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None

SECTION 15: Regulatory information

United States regulations

Inventory listing (TSCA):

7758-99-8	Copper Sulfate, Pentahydrate	Not Listed
497-19-8	Sodium Carbonate, Anhydrous	Listed
6132-04-3	Sodium Citrate	Not Listed
7732-18-5	Water	Listed

Significant New Use Rule (TSCA Section 5): Not determined.

Export notification under TSCA Section 12(b): Not determined.

SARA Section 311/312 hazards:

Acute	Chronic	Fire	Pressure	Reactive
Yes	No	No	No	No

SARA Section 302 extremely hazardous substances: Not determined.

SARA Section 313 toxic chemicals:

7758-99-8	Copper Sulfate, Pentahydrate	Not Listed
497-19-8	Sodium Carbonate, Anhydrous	Not Listed
6132-04-3	Sodium Citrate	Not Listed

CERCLA: Not determined.

RCRA: Not determined.

Section 112(r) of the Clean Air Act (CAA): Not determined.

Massachusetts Right to Know:

7758-99-8	Copper Sulfate, Pentahydrate	Listed
497-19-8	Sodium Carbonate, Anhydrous	Not Listed
6132-04-3	Sodium Citrate	Not Listed

New Jersey Right to Know:

7758-99-8	Copper Sulfate, Pentahydrate	Listed
497-19-8	Sodium Carbonate, Anhydrous	Not Listed

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.06.2017

Page 9 of 9

Revision date: 12.08.2017

Benedict's Solution

6132-04-3	Sodium Citrate	Not Listed
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New York Right to Know:

7758-99-8	Copper Sulfate, Pentahydrate	Listed
497-19-8	Sodium Carbonate, Anhydrous	Not Listed
6132-04-3	Sodium Citrate	Not Listed

Pennsylvania Right to Know:

7758-99-8	Copper Sulfate, Pentahydrate	Listed
497-19-8	Sodium Carbonate, Anhydrous	Not Listed
6132-04-3	Sodium Citrate	Not Listed

California Proposition 65: None of the ingredients are listed.

SECTION 16: Other information

Abbreviations and Acronyms: None

Disclaimer:

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. 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: 2-0-0

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End of Safety Data Sheet