

Material Safety Data Sheet



Benedict's Solution, Quantitative

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Carolina Biological Supply Company

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CAROLINA
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Section 1 - Product Description

Product Name: Benedict's Solution, Quantitative

Product Code(s): 84-7121, 84-7123

Size: 500 mL, 4 L

Chemical Name: Does not apply, product is a mixture.

CAS Number: See Section 3

Formula: See Section 3

Synonyms: None known.

Distributor: Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215

Chemical Information: 800-227-1150 (8am-5pm (ET) M-F) **Chemtrec** 800-424-9300 (Transportation Spill Response 24 hours)

Section 2 - Hazard Identification

Emergency Overview: N/A

Potential Health Effects:

Eyes: May cause irritation.

Skin: May cause irritation to skin.

Ingestion: May cause gastrointestinal discomfort.

Inhalation: May cause irritation to respiratory tract.

Section 3 - Composition / Information on Ingredients

Principal Hazardous Components: Potassium Ferrocyanide (CAS# 14459-95-1) 0.1%; Potassium Thiocyanate (CAS# 333-20-0) 12.5%; Sodium Carbonate (CAS# 497-19-8) 8.7%; Sodium Citrate (CAS# 68-04-2) 20%; Cupric Sulfate (CAS# 7758-98-7) 1.8%

TLV units: ACGIH-TLV (Cupric Sulfate) 1 mg(Cu)/m³ (TWA)

ACGIH-TLV (Potassium Thiocyanate) 5 mg(CN)/m³ (TWA)

ACGIH-TLV (Potassium Ferrocyanide) 5 mg(CN)/m³ (TWA)

PEL units: OSHA-PEL (Cupric Sulfate) 1 mg(Cu)/m³ (TWA)

Section 4 - First Aid Measures

Emergency and First Aid Procedures:

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

Skin - After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.

Ingestion - If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label. If swallowed, rinse mouth with water (only if the person is conscious).

Inhalation - In case of accident by inhalation: remove casualty to fresh air and keep at rest.

Section 5 - Firefighting Procedures

Flash Point (Method Used): N/A

NFPA Rating:

Health: 2

Fire: 0

Reactivity: 0

Extinguisher Media: Use media suitable to extinguish surrounding fire.

Flammable Limits in Air % by Volume: N/A

Autoignition Temperature: N/A

Special Firefighting Procedures: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.

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

Section 6 - Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: Ventilate area of spill. Eliminate all sources of ignition. Remove all non-essential personnel from area. Clean-up personnel should wear proper protective equipment and clothing. Absorb material with suitable absorbent and containerize for disposal.

Section 7 - Special Precautions

Precautions to Take in Handling or Storing: Avoid contact with skin and eyes.

After contact with skin, wash immediately with plenty of water.

Keep container tightly closed in a cool place.

Keep away from oxidizing materials and strong acids.

Avoid contact with clothing.

Do not breathe gas/fumes/vapour/spray.

Harmful if swallowed.

Section 8 - Protection Information

Respiratory Protection (Specify Type): None needed under normal conditions of use with adequate ventilation. A NIOSH/MSHA chemical cartridge respirator should be worn if PEL or TLV is exceeded.

Ventilation:

Local Exhaust: Preferred

Mechanical(General): Acceptable

Special: No

Other: No

Protective Gloves: Natural rubber, Neoprene, PVC or equivalent.

Eye Protection: Splash proof chemical safety goggles should be worn.

Other Protective Clothing or Equipment: Lab coat, apron, eye wash, safety shower.

Section 9 - Physical Data

Molecular Weight: N/A

Boiling Point: Approximately 110-120 °C

Vapor Density(Air=1): N/A

Percent Volatile by Volume: Approximately 98%

Solubility in Water: Soluble

Melting Point: N/A

Vapor Pressure: N/A

Specific Gravity (H₂O=1): 1.145

Evaporation Rate (BuAc=1): N/A

Appearance and Odor: Dark Blue, odorless solution.

Section 10 - Reactivity Data

Stability: Stable

Conditions to Avoid: Heat and sources of ignition.

Incompatibility (Materials to Avoid): Acids, Oxidizers,

Hazardous Decomposition Products: CO_x, NO_x, Cyanides,

Hazardous Polymerization: Will not occur

Section 11 - Toxicity Data

Toxicity Data: (Cupric Sulfate) orl-rat LD50 300 mg/kg
(Sodium Citrate) itv-rat LD50 1724 mg/kg
(Sodium Carbonate) orl-rat LD50 4090 mg/kg
(Potassium Thiocyanate) orl-rat LD50 854 mg/kg
(Potassium Ferrocyanide) orl-rat LD50 6400 mg/kg

Effects of Overexposure:

Acute: See Section 2

Chronic: Tumorigenic data cited. Mutation data cited. Reproductive data cited. Not listed as a carcinogen by IARC, NTP or OSHA.

Conditions Aggravated by Overexposure: N/A

Target Organs: N/A

Primary Route(s) of Entry: Inhalation.

Section 12 - Ecological Data

EPA Waste Numbers: N/A

Section 13 - Disposal Information

Waste Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

Section 14 - Transport Information

DOT Proper Shipping Name: N/A

Section 15 - Regulatory Information

EPA TSCA Status: On TSCA Inventory

Hazard Category for SARA Section 311/312 Reporting: Acute

Name List:

Potassium Ferrocyanide: No
Potassium thiocyanate: Yes
Sodium Carbonate: No
Sodium Citrate: No
Cupric Sulfate: No

Chemical Category:

Potassium Ferrocyanide: Cyanide Compounds
Potassium Thiocyanate: No
Sodium Carbonate: No
Sodium Citrate: No
Cupric Sulfate: Copper

CERCLA Section 103 RQ(lb.): Potassium Ferrocyanide: No

Potassium thiocyanate: No

Sodium Carbonate: No

Sodium Citrate: No

Cupric Sulfate: 10

RCRA Section 261.33: Potassium Ferrocyanide: No

Potassium Thiocyanate: No

Sodium Carbonate: No

Sodium Citrate: No

Cupric Sulfate: No

Section 16 - Additional Information

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. Any employer must carefully assess the applicability of any information contained herein in regards to the particular use to which the employer puts the material.

Glossary

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