

# Material Safety Data Sheet

## Benedict Quantitative Solution

ACC# 02565

### Section 1 - Chemical Product and Company Identification

MSDS Name: Benedict Quantitative Solution

Catalog Numbers: S71369, S71369-1, S79914, S79914-1, S79914-2

Synonyms: None

Company Identification:

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
333-20-0	Potassium thiocyanate	11	206-370-1
5968-11-6	Sodium carbonate monohydrate	10	unlisted
6132-04-3	Sodium citrate dihydrate	17	unlisted
7732-18-5	Water	60.5	231-791-2
7758-99-8	Copper (ii) sulfate pentahydrate	1.4	unlisted

Hazard Symbols: None listed.

Risk Phrases: None listed.

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: clear. Warning! Causes severe eye irritation. Causes skin irritation. Causes severe digestive tract irritation with pain, nausea, vomiting and diarrhea. May corrode the digestive tract with hemorrhaging and possible shock. Causes respiratory tract irritation. May cause liver and kidney damage. This substance has caused adverse reproductive and fetal effects in animals.

Target Organs: Kidneys, liver.

#### Potential Health Effects

**Eye:** Exposure to particulates or solution may cause conjunctivitis, ulceration, and corneal abnormalities.

**Skin:** Causes skin irritation.

**Ingestion:** May cause severe digestive tract irritation with abdominal pain, nausea, vomiting and diarrhea. May cause hemorrhaging of the digestive tract.

**Inhalation:** May cause respiratory tract irritation. May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities.

**Chronic:** Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. May cause liver and kidney damage. May cause reproductive and fetal effects.

## Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

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

**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

**Inhalation:** Remove from exposure to fresh air immediately. If not breathing, give artificial respiration.

## Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Potassium thiocyanate	none listed	none listed	none listed
Sodium carbonate monohydrate	none listed	none listed	none listed
Sodium citrate dihydrate	none listed	none listed	none listed
Water	none listed	none listed	none listed
Copper (ii) sulfate pentahydrate	none listed	none listed	none listed

OSHA Vacated PELs: Potassium thiocyanate: No OSHA Vacated PELs are listed for this chemical. 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: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear natural rubber gloves, apron, and/or clothing.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

## Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear

Odor: none reported

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 212 deg F

Freezing/Melting Point: Not available.

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Decomposition Temperature: Not available.

NFPA Rating: Not published.

Explosion Limits, Lower: Not available.



Neurotoxicity: No information available.

Mutagenicity: **Unscheduled DNA Synthesis:** hamster embryo 200 umol/L **Oncogenic**

**Transformation:** hamster embryo 80 umol/L

Other Studies: No data available.

## Section 12 - Ecological Information

No information available.

## 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

	US DOT	IATA	RID/ADR	IMO	Canada TDG
<b>Shipping Name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(CONTAINS CUPRIC SULFATE)				No information available.
<b>Hazard Class:</b>	9				
<b>UN Number:</b>	UN3082				
<b>Packing Group:</b>	III				

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 333-20-0 is listed on the TSCA inventory.

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 on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements (40CFR720.3(u)(2)).

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 # 333-20-0: acute. CAS # 5968-11-6: acute. CAS # 7758-99-8: acute, chronic.

Section 313

Section 302er a Chemical Test Rule.reqremicaCWA. er ae TSCA Inventory. Chemical Test Ru

CAS# 7732-18-5 is listed on Canada's DSL List. CAS# 7732-18-5 is listed on Canada's DSL List.  
CAS# 7732-18-5 is listed on Canada's DSL List.

This product has a WHMIS classification of E.

CAS# 333-20-0 is not listed on Canada's Ingredient Disclosure List.

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# 333-20-0 (listed as \*\* undefined \*\*): OEL-ARAB Republic of Egypt:

TWA 5 mg/m<sup>3</sup>; Skin OEL-AUSTRALIA: TWA 5 mg/m<sup>3</sup>; Skin OEL-AUSTRIA: TWA 5 mg/m<sup>3</sup>; Skin OEL-CZECHOSLOVAKIA: TWA 3 mg/m<sup>3</sup>; STEL 10 mg/m<sup>3</sup> JAN9 OEL-DENMARK: TWA 5 mg/m<sup>3</sup>; Skin OEL-FINLAND: TWA 5 mg/m<sup>3</sup>; STEL 10 mg/m<sup>3</sup> OEL-FRANCE: TWA 5 mg/m<sup>3</sup>; Skin OEL-GERMANY: TWA 5 mg/m<sup>3</sup>; Skin OEL-HUNGARY: TWA 0.3 mg/m<sup>3</sup>; STEL 0.6 mg/m<sup>3</sup>; Skin OEL-INDIA: TWA 4 mg/m<sup>3</sup>; Skin OEL-THE NETHERLANDS: TWA 5 mg/m<sup>3</sup>; Skin OEL-THE PHILIPPINES: TWA 5 mg/m<sup>3</sup>; Skin OEL-POLAND: TWA 0.3 mg/m<sup>3</sup> OEL-SWEDEN: STEL 5 mg/m<sup>3</sup>; Skin OEL-SWITZERLAND: TWA 5 mg/m<sup>3</sup>; STEL 10 mg/m<sup>3</sup>; Skin OEL-THAILAND: TWA 5 mg/m<sup>3</sup> OEL-UNITED KINGDOM: TWA 5 mg/m<sup>3</sup>; Skin

CAS# 7758-99-8: OEL-ARAB Republic of Egypt: TWA 0.1 mg(Cu)/m<sup>3</sup> (fume) OEL-AUSTRALIA: TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-AUSTRALIA: TWA 1 mg(Cu)/m<sup>3</sup> (dust) OEL-BELGIUM: TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-BELGIUM: TWA 1 mg(Cu)/m<sup>3</sup> (dust) OEL-DENMARK: TWA 0.1 mg(Cu)/m<sup>3</sup> (fume) OEL-DENMARK: TWA 1 mg(Cu)/m<sup>3</sup> (dust) OEL-FINLAND: TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-FINLAND: TWA 1 mg(Cu)/m<sup>3</sup> OEL-FINLAND: TWA 1 mg(Cu)/m<sup>3</sup> (dust) OEL-FRANCE: TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-FRANCE: TWA 1 mg(Cu)/m<sup>3</sup>; STEL 2 mg(Cu)/m<sup>3</sup> (dust) OEL-GERMANY: TWA 0.1 mg(Cu)/m<sup>3</sup> (fume) OEL-GERMANY: TWA 1 mg(Cu)/m<sup>3</sup> OEL-GERMANY: TWA 1 mg(Cu)/m<sup>3</sup> (dust) OEL-HUNGARY: TWA 0.2 mg(Cu)/m<sup>3</sup>; STEL 0.4 mg(Cu)/m<sup>3</sup> (dust) OEL-INDIA: TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-THE NETHERLANDS: TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-THE NETHERLANDS: TWA 1 mg(Cu)/m<sup>3</sup> (dust) OEL-THE PHILIPPINES: TWA 1.0 mg(Cu)/m<sup>3</sup> (fume) JAN9 OEL-POLAND: TWA 0.1 mg(Cu)/m<sup>3</sup> (fume) OEL-RUSSIA: STEL 0.5 ppm (1 mg(Cu)/m<sup>3</sup>) (dust) JAN9 OEL-SWEDEN: TWA 0.2 mg(Cu)/m<sup>3</sup> (resp. dust) OEL-SWEDEN: TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-SWEDEN: TWA 1 mg(Cu)/m<sup>3</sup> (total dust) OEL-SWITZERLAND: TWA 0.1 mg(Cu)/m<sup>3</sup>; STEL 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-SWITZERLAND: TWA 1 mg(Cu)/m<sup>3</sup>; STEL 1 mg(Cu)/m<sup>3</sup> OEL-THAILAND: TWA 0.1 mg(Cu)/m<sup>3</sup> (fume) OEL-THAILAND: TWA 1 mg(Cu)/m<sup>3</sup> OEL-U

## Section 16 - Additional Information

MSDS Creation Date: 9/02/1997

Revision #1 Date: 8/02/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.