Benedict Qualitative Solution

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 05/13/2013 Revision date: 05/13/2013 Supersedes: 03/31/2010 Version: 1.0

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.

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

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.

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.

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.

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

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

Sodium Carbonate Anhydrous (497-19-8)	
LC50 fish 1	300 mg/l
EC50 Daphnia 1	265 mg/l
LC50 fish 2	740 mg/l

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

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

Sodium Carbonate Anhydrous (497-19-8)	
Persistence and degradability	Not established.

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

Benedict Qualitative Solution	
Bioaccumulative potential	Not established.

Sodium Carbonate Anhydrous (497-19-8)	
Bioaccumulative potential	Not established.

Copper(II) sulfate, pentahydrate (7758-99-8)	
Bioaccumulative potential	Bioaccumable. Not established.

12.4. Mobility in soil

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

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

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

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

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

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:

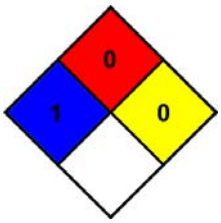
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1

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)