

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/27/2024

Reviewed on 06/27/2024

## 1 Identification

- **Product identifier**
- **Trade name:** Benedict's  
Quantitative Solution
- **Article number:** B1110
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Aqua Solutions, Inc.  
6913 Highway 225  
DEER PARK, TX 77536  
USA  
800-256-2586
- **Information department:**  
Technical Coordinator  
Sherman Nelson shermann@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Acute Toxicity - Inhalation 4 H332 Harmful if inhaled.

Eye Irritation 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard-determining components of labeling:**  
Potassium Thiocyanate
- **Hazard statements**  
Harmful if inhaled.  
Causes serious eye irritation.
- **Precautionary statements**  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Wash thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Wear eye protection / face protection.  
If swallowed: Call a poison center/doctor if you feel unwell.  
If on skin: Wash with plenty of water.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization:** *Mixtures*
- **Description:** *Mixture of the substances listed below with nonhazardous additions.*

### · **Dangerous components:**

CAS: 333-20-0	Potassium Thiocyanate	10.337%
CAS: 497-19-8	Sodium Carbonate Anhydrous	8.27%
CAS: 7758-99-8	Cupric Sulfate Pentahydrate	1.489%

### · **Table of Nonhazardous Ingredients**

CAS: 7732-18-5	Water	63.345%
CAS: 6132-04-3	Sodium Citrate Dihydrate	16.539%
CAS: 14459-95-1	Potassium Ferrocyanide	0.021%

## 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
*Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*
- **After inhalation:**  
*Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.*
- **After skin contact:** *Immediately rinse with water.*
- **After eye contact:**  
*Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.*
- **After swallowing:** *If symptoms persist consult doctor.*
- **Information for doctor:**  
*Most important symptoms and effects, both acute and delayed No further relevant information available.*
- **Indication of any immediate medical attention and special treatment needed**  
*No further relevant information available.*

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## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

### · PAC-1:

CAS: 333-20-0	Potassium Thiocyanate	2.6 mg/m <sup>3</sup>
CAS: 497-19-8	Sodium Carbonate Anhydrous	7.6 mg/m <sup>3</sup>
CAS: 7758-99-8	Cupric Sulfate Pentahydrate	12 mg/m <sup>3</sup>
CAS: 14459-95-1	Potassium Ferrocyanide	16 mg/m <sup>3</sup>

### · PAC-2:

CAS: 333-20-0	Potassium Thiocyanate	28 mg/m <sup>3</sup>
CAS: 497-19-8	Sodium Carbonate Anhydrous	83 mg/m <sup>3</sup>
CAS: 7758-99-8	Cupric Sulfate Pentahydrate	32 mg/m <sup>3</sup>
CAS: 14459-95-1	Potassium Ferrocyanide	23 mg/m <sup>3</sup>

### · PAC-3:

CAS: 333-20-0	Potassium Thiocyanate	170 mg/m <sup>3</sup>
CAS: 497-19-8	Sodium Carbonate Anhydrous	500 mg/m <sup>3</sup>
CAS: 7758-99-8	Cupric Sulfate Pentahydrate	190 mg/m <sup>3</sup>
CAS: 14459-95-1	Potassium Ferrocyanide	140 mg/m <sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.

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- **Information about protection against explosions and fires:** *No special measures required.*
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** *No special requirements.*
- **Information about storage in one common storage facility:** *Not required.*
- **Further information about storage conditions:** *Keep receptacle tightly sealed.*
- **Specific end use(s)** *No further relevant information available.*

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** *No further data; see section 7.*
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
*The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.*
- **Additional information:** *The lists that were valid during the creation were used as basis.*
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
*Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.*
- **Breathing equipment:**  
*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.*
- **Protection of hands:**



Protective gloves

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*

*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

- **Material of gloves**

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.*

- **Penetration time of glove material**

*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*

- **Eye protection:**



Tightly sealed goggles

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· **Body protection:** *Protective work clothing*

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### 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** *Liquid*

**Color:** *Blue*

· **Odor:** *Odorless*

· **Odor threshold:** *Not determined.*

· **pH-value:** *Not determined.*

· **Change in condition**

**Melting point/Melting range:** *Undetermined.*

**Boiling point/Boiling range:** *100 °C (212 °F)*

· **Flash point:** *Not applicable.*

· **Flammability (solid, gaseous):** *Not applicable.*

· **Decomposition temperature:** *Not determined.*

· **Ignition temperature:** *Product is not selfigniting.*

· **Danger of explosion:** *Product does not present an explosion hazard.*

· **Explosion limits:**

**Lower:** *Not determined.*

**Upper:** *Not determined.*

· **Vapor pressure at 20 °C (68 °F):** *23 hPa (17.3 mm Hg)*

· **Density at 20 °C (68 °F):** *1.2092 g/cm<sup>3</sup> (10.09077 lbs/gal)*

· **Relative density** *Not determined.*

· **Vapor density** *Not determined.*

· **Evaporation rate** *Not determined.*

· **Solubility in / Miscibility with**

**Water:** *Fully miscible.*

· **Partition coefficient (n-octanol/water):** *Not determined.*

· **Viscosity:**

**Dynamic:** *Not determined.*

**Kinematic:** *Not determined.*

· **Solvent content:**

**Water:** *63.3 %*

**VOC content:** *0.00 %*

*0.0 g/l / 0.00 lb/gal*

**Solids content:** *36.7 %*

· **Other information** *No further relevant information available.*

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## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**ATE (Acute Toxicity Estimate)**

Oral	LD50	8,262 mg/kg
Dermal	LD50	10,641 mg/kg
Inhalative	LC50/4h	14.5 mg/l

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Irritant

- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*
- **Other adverse effects** *No further relevant information available.*

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to official regulations.*
- **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

### 14 Transport information

- |  |  |
|--|--|
| · <b>UN-Number</b>   |  |
| · <b>DOT, ADN, IMDG, IATA</b>  | <i>Not regulated</i>   |
| · <b>UN proper shipping name</b>   |  |
| · <b>DOT</b>   | <i>Not regulated</i>   |
|  | <i>Not regulated</i>   |
| · <b>ADN, IMDG, IATA</b>   | <i>Not regulated</i>   |
| · <b>Transport hazard class(es)</b>  |  |
| · <b>DOT</b>   | <i>Not applicable</i>  |
| · <b>Class</b>   | <i>Not regulated</i>   |
| · <b>ADN/R Class:</b>  | <i>Not regulated</i>   |
| · <b>Packing group</b>   |  |
| · <b>DOT, IMDG, IATA</b>   | <i>Not regulated</i>   |
| · <b>Environmental hazards:</b>  |  |
| · <b>Marine pollutant:</b>   | <i>No</i>  |
| · <b>Special precautions for user</b>  | <i>Not applicable.</i>   |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | <i>Not applicable.</i>   |
| · <b>Transport/Additional information:</b>                                       |  |
| · <b>DOT</b>   |  |
| · <b>Quantity limitations</b>  | <i>On passenger aircraft/rail: No limit<br/>On cargo aircraft only: No limit</i> |
| · <b>UN "Model Regulation":</b>  | <i>Not regulated</i>   |

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
*No further relevant information available.*

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· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

CAS: 7758-99-8 | Cupric Sulfate Pentahydrate

· **TSCA (Toxic Substances Control Act):**

Water

ACTIVE

Potassium Thiocyanate

ACTIVE

Sodium Carbonate Anhydrous

ACTIVE

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**

Potassium Thiocyanate

· **Hazard statements**

Harmful if inhaled.

Causes serious eye irritation.

· **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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*Wear eye protection / face protection.*

*If swallowed: Call a poison center/doctor if you feel unwell.*

*If on skin: Wash with plenty of water.*

*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

\*

### 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Environment protection department.

· **Contact:**

*Date of Preparation / Last Revision:*

· **Date of preparation / last revision**

*Revision 1.2 06/27/2024: Reviewed SDS for accuracy. MH/STN*

*Revision 0.0, 10-19-2020: Creation date for SDS. STN*

*06/27/2024 / 1.0*

· **Abbreviations and acronyms:**

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*ELINCS: European List of Notified Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*VOC: Volatile Organic Compounds (USA, EU)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety & Health*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

*REL: Recommended Exposure Limit*

*Acute Toxicity - Inhalation 4: Acute toxicity – Category 4*

*Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A*

· **\* Data compared to the previous version altered.**

US