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A Geno Technology, Inc. (USA) brand name

# Safety Data Sheet

## Dialysis

Cat. # BE-603



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# Tube-O-DIALYZER

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Date of issue: 2/25/2013 Revision date: 11/24/2025 Supersedes: 10/31/2025 Version: 11.0

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Article  
Product name : Tube-O-DIALYZER  
Product code : T111

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

No additional information available

#### 1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.  
9800 Page Avenue  
St. Louis, MO 63132-1429, USA  
Tel. 1-800-628-7730  
[www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2 Hazard Identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

|                                            |      |                     |
|--------------------------------------------|------|---------------------|
| Flammable liquid, Category 4               | H227 | Combustible liquid. |
| Carcinogenicity, Category 1A               | H350 | May cause cancer.   |
| Full text of H statements : see section 16 |      |                     |

#### 2.2. Label elements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) : H227 - Combustible liquid  
H350 - May cause cancer.

Precautionary statements (GHS US) : P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.  
P308+P313 - If exposed or concerned: Get medical advice/attention.  
P370+P378 - In case of fire: Use appropriate media to extinguish.  
P403 - Store in a well-ventilated place.  
P405 - Store locked up.

# Tube-O-DIALYZER

## Safety Data Sheet

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

P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

### 2.4. Hazards not otherwise classified

No additional information available

### 2.5. Unknown acute toxicity

No additional information available

## SECTION 3 Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name            | Common Name (Synonyms) | Product identifier | %    | GHS US classification |
|-----------------|------------------------|--------------------|------|-----------------------|
| Deionized water |                        | CAS-No.: 7732-18-5 | ≥ 80 | Not classified        |

# Tube-O-DIALYZER

## Safety Data Sheet

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

| Name    | Common Name (Synonyms)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Product identifier | %       | GHS US classification                |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|--------------------------------------|
| ethanol | 1-hydroxyethane / absolute alcohol / absolute ethanol / alcohol / alcohol 200 proof / alcohol C2 / alcohol, absolute / alcohol, anhydrous / alcohol, dehydrated / algrain / anhydrol / anydrol / APEXA / bioethanol / BIO-Fire / cologne spirit / cologne spirits / ECO-Fire / ethanol / ethanol 200 proof / ethanol, absolute / ethicap / ethyl alcohol / ethyl alcohol, anhydrous / ethyl hydrate / ethyl hydroxide / ethylic alcohol / fermentation alcohol / grain alcohol / hydrated oxide of ethyl / IMS grades (=ethanol) / industrial alcohol / jaysol / jaysol S / methyl carbinol / methylated spirit (=ethanol) / molasses alcohol / neutral spirits / potable spirits / potato alcohol / proof spirits / rectified spiritus / SD alcohol 23- hydrogen / silent spirit / spirit / spirit of wine / spirits of wine / tecsol / Tecsol C | CAS-No.: 64-17-5   | 10 – 50 | Flam. Liq. 2, H225<br>Carc. 1A, H350 |

Full text of hazard classes and H-statements : see section 16

# Tube-O-DIALYZER

## Safety Data Sheet

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

### SECTION 4 First aid measures

#### 4.1. Description of necessary 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). IF exposed or concerned: Get medical advice/attention.               |
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.                                                                 |
| First-aid measures after skin contact | : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. |
| First-aid measures after eye contact  | : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.                                                       |
| First-aid measures after ingestion    | : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.                                                                   |
| Self protection of the first-aider    | : First aid workers will be equipped with suitable personal protective equipment.                                                                                                                      |

#### 4.2. Most important symptoms/effects, acute and delayed

|                                                     |                                                                     |
|-----------------------------------------------------|---------------------------------------------------------------------|
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met. |
| Symptoms/effects after inhalation                   | : May cause cancer by inhalation.                                   |
| Symptoms/effects after skin contact                 | : None under normal conditions.                                     |
| Symptoms/effects after eye contact                  | : None under normal conditions.                                     |
| Symptoms/effects after ingestion                    | : None under normal conditions.                                     |

#### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

|                                   |                          |
|-----------------------------------|--------------------------|
| Other medical advice or treatment | : Treat symptomatically. |
|-----------------------------------|--------------------------|

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

|                                |                                                        |
|--------------------------------|--------------------------------------------------------|
| Suitable extinguishing media   | : Sand. Water spray. Dry powder. Foam. Carbon dioxide. |
| Unsuitable extinguishing media | : Do not use a heavy water stream.                     |

#### 5.2. Specific hazards arising from the chemical

|                                                  |                                                          |
|--------------------------------------------------|----------------------------------------------------------|
| Fire hazard                                      | : Combustible liquid. Highly flammable liquid and vapor. |
| Explosion hazard                                 | : May form flammable/explosive vapor-air mixture.        |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released.                           |

#### 5.3. Special protective equipment and precautions for fire-fighters

|                                |                                                                                                                                                                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Firefighting instructions      | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.                          |

### SECTION 6 Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

|                  |                                                                                                                                                                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General measures | : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking. Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage. |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# Tube-O-DIALYZER

## Safety Data Sheet

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

### For non-emergency personnel

- |                      |                                                                                                                                                                  |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protective equipment | : Wear recommended personal protective equipment.                                                                                                                |
| Emergency procedures | : Evacuate unnecessary personnel. No open flames, no sparks, and no smoking. Only qualified personnel equipped with suitable protective equipment may intervene. |

### For emergency responders

- |                           |                                                                                                                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protective equipment      | : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".    |
| Emergency procedures      | : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.                                                                                                                             |
| Environmental precautions | : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Notify authorities if product enters sewers or public waters. |

## 6.2. Methods and materials for containment and cleaning up

- |                         |                                                                                                                                                                                                                                                            |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For containment         | : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.                                                                      |
| Methods for cleaning up | : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Notify authorities if product enters sewers or public waters. |
| Other information       | : Dispose of materials or solid residues at an authorized site.                                                                                                                                                                                            |

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

- |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Precautions for safe handling     | : Ensure good ventilation of the work station. 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. No open flames. No smoking. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. |
| Hygiene measures                  | : Separate working clothes from town clothes. Launder separately. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Additional hazards when processed | : Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

### 7.2. Conditions for safe storage, including incompatibilities

- |                        |                                                                                                                                                                                                                                                 |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technical measures     | : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.                                                                                                                    |
| Storage conditions     | : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Keep in fireproof place. Store in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed. |
| Incompatible products  | : Strong bases. Strong acids.                                                                                                                                                                                                                   |
| Incompatible materials | : Sources of ignition. Direct sunlight. Heat sources.                                                                                                                                                                                           |
| Storage temperature    | : 4 °C                                                                                                                                                                                                                                          |
| Packaging materials    | : Store always product in container of same material as original container.                                                                                                                                                                     |

# Tube-O-DIALYZER

## Safety Data Sheet

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

### SECTION 8 Exposure controls/personal protection

#### 8.1. Control parameters

##### ethanol (64-17-5)

##### USA - ACGIH - Occupational Exposure Limits

|                  |          |
|------------------|----------|
| ACGIH® TLV® STEL | 1000 ppm |
|------------------|----------|

##### USA - Cal/OSHA - Occupational Exposure Limits

|                        |                                                                                                                                      |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Local name             | Ethyl alcohol; ethanol                                                                                                               |
| Cal/OSHA PEL (OEL TWA) | 1900 mg/m <sup>3</sup><br>1000 ppm                                                                                                   |
| Regulatory reference   | California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1) |

##### USA - NIOSH - Occupational Exposure Limits

|                                 |                                                                         |
|---------------------------------|-------------------------------------------------------------------------|
| Local name                      | Ethyl alcohol (Ethanol)                                                 |
| NIOSH REL 10h TWA               | 1000 ppm                                                                |
| Regulatory reference (US-NIOSH) | OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG)) |

#### 8.2. Appropriate engineering controls

|                                  |                                                |
|----------------------------------|------------------------------------------------|
| Appropriate engineering controls | : Ensure good ventilation of the work station. |
| Environmental exposure controls  | : Avoid release to the environment.            |

#### 8.3. Individual protection measures, such as personal protective equipment

##### Personal protective equipment:

Avoid all unnecessary exposure.

##### Hand protection:

Protective gloves. Wear protective gloves.

##### Eye protection:

Chemical goggles or safety glasses. Safety glasses

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate mask. [In case of inadequate ventilation] wear respiratory protection.

##### Personal protective equipment symbol(s):



##### Other information:

Do not eat, drink or smoke during use.

# Tube-O-DIALYZER

## Safety Data Sheet

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

### SECTION 9 Physical and chemical properties

#### 9.1. Basic physical and chemical properties

|                                                 |                                                        |
|-------------------------------------------------|--------------------------------------------------------|
| Physical state                                  | : Liquid                                               |
| Appearance                                      | : Plastic (polyethylene) tubes with dialysis membrane. |
| Color                                           | : Clear                                                |
| Odor                                            | : characteristic                                       |
| Odor threshold                                  | : No data available                                    |
| pH                                              | : No data available                                    |
| Melting point                                   | : Not applicable                                       |
| Freezing point                                  | : No data available                                    |
| Boiling point                                   | : No data available                                    |
| Flash point                                     | : 65 °C                                                |
| Flammability (solid, gas)                       | : Not applicable.                                      |
| Vapor pressure                                  | : No data available                                    |
| Relative vapor density at 20°C                  | : No data available                                    |
| Relative density                                | : No data available                                    |
| Solubility                                      | : No data available                                    |
| Partition coefficient n-octanol/water (Log Pow) | : No data available                                    |
| Auto-ignition temperature                       | : No data available                                    |
| Decomposition temperature                       | : No data available                                    |
| Viscosity, kinematic                            | : No data available                                    |
| Explosion limits                                | : No data available                                    |
| Particle characteristics                        | : No data available                                    |

#### 9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

### SECTION 10 Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport. Highly flammable liquid and vapor.

#### 10.2. Chemical stability

Stable under normal conditions. Combustible liquid. May form flammable/explosive vapor-air mixture.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

#### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Sparks. Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

# Tube-O-DIALYZER

## Safety Data Sheet

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

### SECTION 11 Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

| Deionized water (7732-18-5) |                         |
|-----------------------------|-------------------------|
| LD50 oral rat               | 90000 mg/kg             |
| ATE US (oral)               | 90000 mg/kg body weight |

| ethanol (64-17-5)              |                                                                                                                                  |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| LD50 oral rat                  | 10470 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))                 |
| LD50 oral                      | 8300 mg/kg body weight Animal: mouse                                                                                             |
| LD50 dermal rabbit             | > 15800 mg/kg body weight (Rabbit, Experimental value, Dermal)                                                                   |
| LC50 Inhalation - Rat          | 124.7 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s)) |
| LC50 Inhalation - Rat (Vapors) | 116.9 mg/l Source: ECHA                                                                                                          |
| ATE US (oral)                  | 10470 mg/kg body weight                                                                                                          |
| ATE US (vapors)                | 116.9 mg/l/4h                                                                                                                    |
| ATE US (dust, mist)            | 124.7 mg/l/4h                                                                                                                    |

Skin corrosion/irritation : Not classified

| Deionized water (7732-18-5) |   |
|-----------------------------|---|
| pH                          | 7 |

| ethanol (64-17-5) |                    |
|-------------------|--------------------|
| pH                | 7 (789 g/l, 20 °C) |

Serious eye damage/irritation : Not classified

| Deionized water (7732-18-5) |   |
|-----------------------------|---|
| pH                          | 7 |

| ethanol (64-17-5) |                    |
|-------------------|--------------------|
| pH                | 7 (789 g/l, 20 °C) |

Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : May cause cancer.

| ethanol (64-17-5) |                            |
|-------------------|----------------------------|
| IARC group        | 1 - Carcinogenic to humans |

Reproductive toxicity : Not classified  
STOT-single exposure : Not classified  
STOT-repeated exposure : Not classified

| ethanol (64-17-5)          |                                                                                                                                           |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| LOAEL (oral, rat, 90 days) | 3200 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) |

# Tube-O-DIALYZER

## Safety Data Sheet

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

| ethanol (64-17-5)                             |                                                                                                                                                                       |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NOAEL (oral,rat,90 days)                      | 1730 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents), Remarks on results: other: |
| NOAEL (subchronic,oral,animal/male,90 days)   | < 9700 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)                                             |
| NOAEL (subchronic,oral,animal/female,90 days) | > 9400 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)                                           |

Aspiration hazard : Not classified

| ethanol (64-17-5)                                   |                                                                     |
|-----------------------------------------------------|---------------------------------------------------------------------|
| Viscosity, kinematic                                | 1.6 mm <sup>2</sup> /s (20 °C)                                      |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met. |
| Symptoms/effects after inhalation                   | : May cause cancer by inhalation.                                   |
| Symptoms/effects after skin contact                 | : None under normal conditions.                                     |
| Symptoms/effects after eye contact                  | : None under normal conditions.                                     |
| Symptoms/effects after ingestion                    | : None under normal conditions.                                     |

## SECTION 12 Ecological information

### 12.1. Ecotoxicity

|                                                           |                      |
|-----------------------------------------------------------|----------------------|
| Ecology - general                                         | : No data available. |
| Ecology - air                                             | : No data available. |
| Ecology - water                                           | : No data available. |
| Hazardous to the aquatic environment, short-term (acute)  | : Not classified     |
| Hazardous to the aquatic environment, long-term (chronic) | : Not classified     |

| ethanol (64-17-5)    |                                                                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| LC50 - Fish [1]      | 15300 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Lethal)                                 |
| EC50 - Crustacea [1] | 9300 mg/l (48 h, Daphnia magna, Pure substance)                                                                                              |
| EC50 72h - Algae [1] | 275 mg/l (Equivalent or similar to OECD 201, Chlorella vulgaris, Static system, Fresh water, Experimental value, Growth rate)                |
| EC50 96h - Algae [1] | ≈ 22000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |
| ErC50 algae          | 275 mg/l Source: ECHA                                                                                                                        |
| NOEC (chronic)       | 9.6 mg/l Test organisms (species): Daphnia magna Duration: '9 d'                                                                             |

### 12.2. Persistence and degradability

| Tube-O-DIALYZER               |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
| Deionized water (7732-18-5)   |                  |
| Persistence and degradability | Not established. |
| ethanol (64-17-5)             |                  |
| Persistence and degradability | Not established. |

# Tube-O-DIALYZER

## Safety Data Sheet

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

| ethanol (64-17-5)               |                                           |
|---------------------------------|-------------------------------------------|
| Biochemical oxygen demand (BOD) | 0.8 – 0.967 g O <sub>2</sub> /g substance |
| Chemical oxygen demand (COD)    | 1.7 g O <sub>2</sub> /g substance         |
| ThOD                            | 2.1 g O <sub>2</sub> /g substance         |
| BOD (% of ThOD)                 | 0.43                                      |

### 12.3. Bioaccumulative potential

| Tube-O-DIALYZER                                 |                                                                      |
|-------------------------------------------------|----------------------------------------------------------------------|
| Bioaccumulative potential                       | Not established.                                                     |
| Deionized water (7732-18-5)                     |                                                                      |
| Partition coefficient n-octanol/water (Log Pow) | -1.38                                                                |
| Bioaccumulative potential                       | Not established.                                                     |
| ethanol (64-17-5)                               |                                                                      |
| Partition coefficient n-octanol/water (Log Pow) | -0.35 (Experimental value, Equivalent or similar to OECD 107, 24 °C) |
| Bioaccumulative potential                       | Not established.                                                     |

### 12.4. Mobility in soil

| ethanol (64-17-5)                                          |                                   |
|------------------------------------------------------------|-----------------------------------|
| Surface tension                                            | 22.31 mN/m (20 °C, 100 %)         |
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 0.2 (log Koc, Experimental value) |
| Ecology - soil                                             | Highly mobile in soil.            |

### 12.5. Other adverse effects

|                              |                                     |
|------------------------------|-------------------------------------|
| Ozone                        | : Not classified                    |
| Other adverse effects        | : No data available on ecotoxicity. |
| Fluorinated greenhouse gases | : No                                |
| Other information            | : Avoid release to the environment. |

## SECTION 13 Disposal considerations

|                                            |                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regional legislation (waste)               | : Dispose in a safe manner in accordance with local/national regulations.                                                                                                                                                                                                                                                  |
| Waste treatment methods                    | : Waste treatment methods.                                                                                                                                                                                                                                                                                                 |
| Sewage disposal recommendations            | : Do not dispose of waste into sewer. Disposal must be done according to official regulations.                                                                                                                                                                                                                             |
| Product/Packaging disposal recommendations | : Dispose as hazardous waste. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Disposal must be done according to official regulations. |
| Additional information                     | : Non hazardous waste. Handle empty containers with care because residual vapors are flammable. Do not re-use empty containers. Flammable vapors may accumulate in the container.                                                                                                                                          |
| Ecological waste information               | : No data available. Avoid release to the environment.                                                                                                                                                                                                                                                                     |

## SECTION 14 Transport information

In accordance with DOT / TDG / IATA

# Tube-O-DIALYZER

## Safety Data Sheet

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

### 14.1. UN number

Not regulated for transport

### 14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not regulated  
Proper Shipping Name (TDG) : Not regulated  
Proper Shipping Name (IATA) : Not regulated

### 14.3. Transport hazard class(es)

**DOT**  
Transport hazard class(es) (DOT) : Not regulated

**TDG**  
Transport hazard class(es) (TDG) : Not regulated

**IATA**  
Transport hazard class(es) (IATA) : Not regulated

### 14.4. Packing group

Packing group (DOT) : Not regulated  
Packing group (TDG) : Not regulated  
Packing group (IATA) : Not regulated

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Transport in bulk

Not applicable

### 14.7. Special precautions for user

**DOT**  
Not regulated

**TDG**  
Not regulated

**IATA**  
Not regulated

## SECTION 15 Regulatory information

### 15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

| Name            | CAS-No.   | Listing | Commercial status | Flags |
|-----------------|-----------|---------|-------------------|-------|
| Deionized water | 7732-18-5 | Present |                   | XU    |
| ethanol         | 64-17-5   | Present |                   |       |

# Tube-O-DIALYZER

## Safety Data Sheet

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

### 15.2. International regulations

#### CANADA

##### Deionized water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List)

##### ethanol (64-17-5)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

No additional information available

#### National regulations

##### Deionized water (7732-18-5)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

##### ethanol (64-17-5)

Listed on IARC (International Agency for Research on Cancer)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### 15.3. State regulations

No additional information available

## SECTION 16 Other information

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

Revision date : 11/24/2025  
Date of issue : 2/25/2013  
Other information : None.

#### Full text of hazard classes and H-statements

|      |                                   |
|------|-----------------------------------|
| H225 | Highly flammable liquid and vapor |
| H227 | Combustible liquid                |
| H350 | May cause cancer.                 |

#### Abbreviations and acronyms

|         |                                                                                                 |
|---------|-------------------------------------------------------------------------------------------------|
| ACGIH   | American Conference of Government Industrial Hygienists                                         |
| ADN     | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR     | European Agreement concerning the International Carriage of Dangerous Goods by Road             |
| ATE     | Acute Toxicity Estimate                                                                         |
| BCF     | Bioconcentration factor                                                                         |
| BLV     | Biological limit value                                                                          |
| BOD     | Biochemical oxygen demand (BOD)                                                                 |
| CAS-No. | Chemical Abstract Service number                                                                |
| CLP     | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                     |

# Tube-O-DIALYZER

## Safety Data Sheet

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

| Abbreviations and acronyms |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| COD                        | Chemical oxygen demand (COD)                                                 |
| CSA                        | Chemical safety assessment                                                   |
| DMEL                       | Derived Minimal Effect level                                                 |
| DNEL                       | Derived-No Effect Level                                                      |
| EC-No.                     | European Community number                                                    |
| EC50                       | Median effective concentration                                               |
| ED                         | Endocrine disruptor                                                          |
| EN                         | European Standard                                                            |
| EWC                        | European waste catalogue                                                     |
| IARC                       | International Agency for Research on Cancer                                  |
| IATA                       | International Air Transport Association                                      |
| IMDG                       | International Maritime Dangerous Goods                                       |
| LC50                       | Median lethal concentration                                                  |
| LD50                       | Median lethal dose                                                           |
| LOAEL                      | Lowest Observed Adverse Effect Level                                         |
| Log Kow                    | Partition coefficient n-octanol/water (Log Kow)                              |
| Log Pow                    | Partition coefficient n-octanol/water (Log Pow)                              |
| MAK                        | maximum workplace concentration                                              |
| NOAEC                      | No-Observed Adverse Effect Concentration                                     |
| NOAEL                      | No-Observed Adverse Effect Level                                             |
| NOEC                       | No-Observed Effect Concentration                                             |
| N.O.S.                     | Not Otherwise Specified                                                      |
| OECD                       | Organisation for Economic Co-operation and Development                       |
| OEL                        | Occupational Exposure Limit                                                  |
| OSHA                       | Occupational Safety & Health Administration                                  |
| PBT                        | Persistent Bioaccumulative Toxic                                             |
| PNEC                       | Predicted No-Effect Concentration                                            |
| PPE                        | Personal protection equipment                                                |
| RID                        | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS                        | Safety Data Sheet                                                            |
| STP                        | Sewage treatment plant                                                       |
| TF                         | Technical function                                                           |
| ThOD                       | Theoretical oxygen demand (ThOD)                                             |
| TLM                        | Median Tolerance Limit                                                       |
| TWA                        | Time Weighted Average                                                        |
| VOC                        | Volatile Organic Compounds                                                   |

# Tube-O-DIALYZER

## Safety Data Sheet

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

| Abbreviations and acronyms |                                          |
|----------------------------|------------------------------------------|
| vPvB                       | Very Persistent and Very Bioaccumulative |
| UFI                        | Unique Formula Identifier                |

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



# Starch Indicator Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Date of issue: 11/1/2016 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 9.0

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Mixture  
Product name : Starch Indicator Solution  
Product code : S086

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

No additional information available

#### 1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.  
9800 Page Avenue  
St. Louis, MO 63132-1429, USA  
Tel. 1-800-628-7730  
[www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2 Hazard Identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Not classified

#### 2.2. Label elements

##### GHS US labeling

No labeling applicable

#### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

#### 2.4. Hazards not otherwise classified

No additional information available

#### 2.5. Unknown acute toxicity

No additional information available

### SECTION 3 Composition/information on ingredients

#### 3.1. Substances

Not applicable

# Starch Indicator Solution

## Safety Data Sheet

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

### 3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria for section 3.2 of HCS

## SECTION 4 First aid measures

### 4.1. Description of necessary 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   | : Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.            |
| First-aid measures after skin contact | : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water. |
| First-aid measures after eye contact  | : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.  |
| First-aid measures after ingestion    | : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.              |
| Self protection of the first-aiders   | : First aid workers will be equipped with suitable personal protective equipment.                                                                 |

### 4.2. Most important symptoms/effects, acute and delayed

|                                                     |                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------|
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                        |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after inhalation                   | : None under normal conditions.                                                            |
| Symptoms/effects after skin contact                 | : None under normal conditions.                                                            |
| Symptoms/effects after eye contact                  | : None under normal conditions.                                                            |
| Symptoms/effects after ingestion                    | : None under normal conditions.                                                            |

### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

|                                   |                          |
|-----------------------------------|--------------------------|
| Other medical advice or treatment | : Treat symptomatically. |
|-----------------------------------|--------------------------|

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) 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. Specific hazards arising from the chemical

|                                                  |                                |
|--------------------------------------------------|--------------------------------|
| Fire hazard                                      | : No fire hazard.              |
| Explosion hazard                                 | : No direct explosion hazard.  |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |

### 5.3. Special protective equipment and precautions for fire-fighters

|                                |                                                                                                                                                                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Firefighting instructions      | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.                          |

# Starch Indicator Solution

## Safety Data Sheet

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

### SECTION 6 Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

##### For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.  
Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel.

##### For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".  
Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.  
Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.2. Methods and materials for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.  
Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.  
Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

### SECTION 7 Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. 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 : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.  
Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

#### 7.2. Conditions for safe storage, including incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.  
Storage conditions : Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.  
Incompatible products : Strong bases. Strong acids.  
Incompatible materials : Sources of ignition. Direct sunlight.  
Packaging materials : Store always product in container of same material as original container.

### SECTION 8 Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

# Starch Indicator Solution

## Safety Data Sheet

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

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures, such as personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

|                                                                                                 |
|-------------------------------------------------------------------------------------------------|
| <b>Hand protection:</b>                                                                         |
| Protective gloves. Wear protective gloves.                                                      |
| <b>Eye protection:</b>                                                                          |
| Chemical goggles or safety glasses. Safety glasses                                              |
| <b>Skin and body protection:</b>                                                                |
| Wear suitable protective clothing                                                               |
| <b>Respiratory protection:</b>                                                                  |
| In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate mask |

#### Personal protective equipment symbol(s):



#### Other information:

Do not eat, drink or smoke during use.

## SECTION 9 Physical and chemical properties

### 9.1. Basic physical and chemical properties

|                                                 |                                  |
|-------------------------------------------------|----------------------------------|
| Physical state                                  | : Liquid                         |
| Color                                           | : Colorless                      |
| Odor                                            | : characteristic                 |
| Odor threshold                                  | : No data available              |
| pH                                              | : No data available              |
| Melting point                                   | : Not applicable                 |
| Freezing point                                  | : No data available              |
| Boiling point                                   | : No data available              |
| Flash point                                     | : No data available              |
| Flammability (solid, gas)                       | : Not applicable. Non flammable. |
| Vapor pressure                                  | : No data available              |
| Relative vapor density at 20°C                  | : No data available              |
| Relative density                                | : No data available              |
| Solubility                                      | : No data available              |
| Partition coefficient n-octanol/water (Log Pow) | : No data available              |
| Auto-ignition temperature                       | : No data available              |
| Decomposition temperature                       | : No data available              |
| Viscosity, kinematic                            | : No data available              |
| Explosion limits                                | : No data available              |
| Particle characteristics                        | : No data available              |

### 9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

# Starch Indicator Solution

## Safety Data Sheet

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

### SECTION 10 Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Stable under normal conditions. Not established.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

### SECTION 11 Toxicological information

#### 11.1. Information on toxicological effects

|                                                     |                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------|
| Acute toxicity (oral)                               | : Not classified                                                                           |
| Acute toxicity (dermal)                             | : Not classified                                                                           |
| Acute toxicity (inhalation)                         | : Not classified                                                                           |
| Skin corrosion/irritation                           | : Not classified                                                                           |
| Serious eye damage/irritation                       | : Not classified                                                                           |
| Respiratory or skin sensitization                   | : Not classified                                                                           |
| Germ cell mutagenicity                              | : Not classified                                                                           |
| Carcinogenicity                                     | : Not classified                                                                           |
| Reproductive toxicity                               | : Not classified                                                                           |
| STOT-single exposure                                | : Not classified                                                                           |
| STOT-repeated exposure                              | : Not classified                                                                           |
| Aspiration hazard                                   | : Not classified                                                                           |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                        |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after inhalation                   | : None under normal conditions.                                                            |
| Symptoms/effects after skin contact                 | : None under normal conditions.                                                            |
| Symptoms/effects after eye contact                  | : None under normal conditions.                                                            |
| Symptoms/effects after ingestion                    | : None under normal conditions.                                                            |

### SECTION 12 Ecological information

#### 12.1. Ecotoxicity

|                                                          |                                                                                                                        |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Ecology - general                                        | : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. |
| Hazardous to the aquatic environment, short-term (acute) | : Not classified                                                                                                       |

# Starch Indicator Solution

## Safety Data Sheet

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

Hazardous to the aquatic environment, long-term (chronic) : Not classified

### 12.2. Persistence and degradability

#### Starch Indicator Solution

|                               |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

### 12.3. Bioaccumulative potential

#### Starch Indicator Solution

|                           |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |
|---------------------------|------------------|

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

|                              |                                     |
|------------------------------|-------------------------------------|
| Ozone                        | : Not classified                    |
| Fluorinated greenhouse gases | : No                                |
| Other information            | : Avoid release to the environment. |

## SECTION 13 Disposal considerations

|                                            |                                                                                                                                    |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Regional legislation (waste)               | : Disposal must be done according to official regulations.                                                                         |
| Waste treatment methods                    | : Waste treatment methods.                                                                                                         |
| Sewage disposal recommendations            | : Disposal must be done according to official regulations.                                                                         |
| Product/Packaging disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. Disposal must be done according to official regulations. |
| Additional information                     | : Do not re-use empty containers.                                                                                                  |
| Ecological waste information               | : Avoid release to the environment.                                                                                                |

## SECTION 14 Transport information

In accordance with DOT / TDG / IATA

### 14.1. UN number

|               |                  |
|---------------|------------------|
| UN-No. (DOT)  | : Not applicable |
| UN-No. (TDG)  | : Not applicable |
| UN-No. (IATA) | : Not applicable |

### 14.2. UN Proper Shipping Name

|                             |                  |
|-----------------------------|------------------|
| Proper Shipping Name (DOT)  | : Not applicable |
| Proper Shipping Name (TDG)  | : Not applicable |
| Proper Shipping Name (IATA) | : Not applicable |

### 14.3. Transport hazard class(es)

**DOT**  
Transport hazard class(es) (DOT) : Not applicable

**TDG**  
Transport hazard class(es) (TDG) : Not applicable

# Starch Indicator Solution

## Safety Data Sheet

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

### IATA

Transport hazard class(es) (IATA) : Not applicable

### 14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (TDG) : Not applicable

Packing group (IATA) : Not applicable

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Transport in bulk

Not applicable

### 14.7. Special precautions for user

#### DOT

Not applicable

#### TDG

Not applicable

### IATA

Not applicable

## SECTION 15 Regulatory information

### 15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):  
No data available

### 15.2. International regulations

#### CANADA

No additional information available

#### EU-Regulations

No additional information available

#### National regulations

No additional information available

### 15.3. State regulations

No additional information available

## SECTION 16 Other information

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

Revision date : 1/17/2025

Date of issue : 11/1/2016

Other information : None.

### Abbreviations and acronyms

|       |                                                         |
|-------|---------------------------------------------------------|
| ACGIH | American Conference of Government Industrial Hygienists |
|-------|---------------------------------------------------------|

# Starch Indicator Solution

## Safety Data Sheet

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

| Abbreviations and acronyms |                                                                                                 |
|----------------------------|-------------------------------------------------------------------------------------------------|
| ADN                        | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR                        | European Agreement concerning the International Carriage of Dangerous Goods by Road             |
| ATE                        | Acute Toxicity Estimate                                                                         |
| BCF                        | Bioconcentration factor                                                                         |
| BLV                        | Biological limit value                                                                          |
| BOD                        | Biochemical oxygen demand (BOD)                                                                 |
| CAS-No.                    | Chemical Abstract Service number                                                                |
| CLP                        | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                     |
| COD                        | Chemical oxygen demand (COD)                                                                    |
| CSA                        | Chemical safety assessment                                                                      |
| DMEL                       | Derived Minimal Effect level                                                                    |
| DNEL                       | Derived-No Effect Level                                                                         |
| EC-No.                     | European Community number                                                                       |
| EC50                       | Median effective concentration                                                                  |
| ED                         | Endocrine disruptor                                                                             |
| EN                         | European Standard                                                                               |
| EWC                        | European waste catalogue                                                                        |
| IARC                       | International Agency for Research on Cancer                                                     |
| IATA                       | International Air Transport Association                                                         |
| IMDG                       | International Maritime Dangerous Goods                                                          |
| LC50                       | Median lethal concentration                                                                     |
| LD50                       | Median lethal dose                                                                              |
| LOAEL                      | Lowest Observed Adverse Effect Level                                                            |
| Log Kow                    | Partition coefficient n-octanol/water (Log Kow)                                                 |
| Log Pow                    | Partition coefficient n-octanol/water (Log Pow)                                                 |
| MAK                        | maximum workplace concentration                                                                 |
| NOAEC                      | No-Observed Adverse Effect Concentration                                                        |
| NOAEL                      | No-Observed Adverse Effect Level                                                                |
| NOEC                       | No-Observed Effect Concentration                                                                |
| N.O.S.                     | Not Otherwise Specified                                                                         |
| OECD                       | Organisation for Economic Co-operation and Development                                          |
| OEL                        | Occupational Exposure Limit                                                                     |
| OSHA                       | Occupational Safety & Health Administration                                                     |
| PBT                        | Persistent Bioaccumulative Toxic                                                                |
| PNEC                       | Predicted No-Effect Concentration                                                               |
| PPE                        | Personal protection equipment                                                                   |

# Starch Indicator Solution

## Safety Data Sheet

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

| Abbreviations and acronyms |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| RID                        | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS                        | Safety Data Sheet                                                            |
| STP                        | Sewage treatment plant                                                       |
| TF                         | Technical function                                                           |
| ThOD                       | Theoretical oxygen demand (ThOD)                                             |
| TLM                        | Median Tolerance Limit                                                       |
| TWA                        | Time Weighted Average                                                        |
| VOC                        | Volatile Organic Compounds                                                   |
| vPvB                       | Very Persistent and Very Bioaccumulative                                     |
| UFI                        | Unique Formula Identifier                                                    |

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



# Starch Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Date of issue: 11/30/2016 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 9.0

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Mixture  
Product name : Starch Solution  
Product code : S085

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

No additional information available

#### 1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.  
9800 Page Avenue  
St. Louis, MO 63132-1429, USA  
Tel. 1-800-628-7730  
[www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2 Hazard Identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Not classified

#### 2.2. Label elements

##### GHS US labeling

No labeling applicable

#### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

#### 2.4. Hazards not otherwise classified

No additional information available

#### 2.5. Unknown acute toxicity

No additional information available

### SECTION 3 Composition/information on ingredients

#### 3.1. Substances

Not applicable

# Starch Solution

## Safety Data Sheet

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

### 3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria for section 3.2 of HCS

## SECTION 4 First aid measures

### 4.1. Description of necessary 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   | : Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.            |
| First-aid measures after skin contact | : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water. |
| First-aid measures after eye contact  | : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.  |
| First-aid measures after ingestion    | : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.              |
| Self protection of the first-aiders   | : First aid workers will be equipped with suitable personal protective equipment.                                                                 |

### 4.2. Most important symptoms/effects, acute and delayed

|                                                     |                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------|
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                        |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after inhalation                   | : None under normal conditions.                                                            |
| Symptoms/effects after skin contact                 | : None under normal conditions.                                                            |
| Symptoms/effects after eye contact                  | : None under normal conditions.                                                            |
| Symptoms/effects after ingestion                    | : None under normal conditions.                                                            |

### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

|                                   |                          |
|-----------------------------------|--------------------------|
| Other medical advice or treatment | : Treat symptomatically. |
|-----------------------------------|--------------------------|

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) 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. Specific hazards arising from the chemical

|                                                  |                                |
|--------------------------------------------------|--------------------------------|
| Fire hazard                                      | : No fire hazard.              |
| Explosion hazard                                 | : No direct explosion hazard.  |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |

### 5.3. Special protective equipment and precautions for fire-fighters

|                                |                                                                                                                                                                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Firefighting instructions      | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.                          |

# Starch Solution

## Safety Data Sheet

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

### SECTION 6 Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

##### For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.  
Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel.

##### For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".  
Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.  
Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.2. Methods and materials for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.  
Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.  
Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

### SECTION 7 Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. 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 : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.  
Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

#### 7.2. Conditions for safe storage, including incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.  
Storage conditions : Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.  
Incompatible products : Strong bases. Strong acids.  
Incompatible materials : Sources of ignition. Direct sunlight.  
Packaging materials : Store always product in container of same material as original container.

### SECTION 8 Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

# Starch Solution

## Safety Data Sheet

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

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures, such as personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

|                                                                                                 |
|-------------------------------------------------------------------------------------------------|
| <b>Hand protection:</b>                                                                         |
| Protective gloves. Wear protective gloves.                                                      |
| <b>Eye protection:</b>                                                                          |
| Chemical goggles or safety glasses. Safety glasses                                              |
| <b>Skin and body protection:</b>                                                                |
| Wear suitable protective clothing                                                               |
| <b>Respiratory protection:</b>                                                                  |
| In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate mask |

#### Personal protective equipment symbol(s):



#### Other information:

Do not eat, drink or smoke during use.

## SECTION 9 Physical and chemical properties

### 9.1. Basic physical and chemical properties

|                                                 |                                  |
|-------------------------------------------------|----------------------------------|
| Physical state                                  | : Liquid                         |
| Color                                           | : Colorless                      |
| Odor                                            | : characteristic                 |
| Odor threshold                                  | : No data available              |
| pH                                              | : No data available              |
| Melting point                                   | : Not applicable                 |
| Freezing point                                  | : No data available              |
| Boiling point                                   | : No data available              |
| Flash point                                     | : No data available              |
| Flammability (solid, gas)                       | : Not applicable. Non flammable. |
| Vapor pressure                                  | : No data available              |
| Relative vapor density at 20°C                  | : No data available              |
| Relative density                                | : No data available              |
| Solubility                                      | : No data available              |
| Partition coefficient n-octanol/water (Log Pow) | : No data available              |
| Auto-ignition temperature                       | : No data available              |
| Decomposition temperature                       | : No data available              |
| Viscosity, kinematic                            | : No data available              |
| Explosion limits                                | : No data available              |
| Particle characteristics                        | : No data available              |

### 9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

# Starch Solution

## Safety Data Sheet

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

### SECTION 10 Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Stable under normal conditions. Not established.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

### SECTION 11 Toxicological information

#### 11.1. Information on toxicological effects

|                                                     |                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------|
| Acute toxicity (oral)                               | : Not classified                                                                           |
| Acute toxicity (dermal)                             | : Not classified                                                                           |
| Acute toxicity (inhalation)                         | : Not classified                                                                           |
| Skin corrosion/irritation                           | : Not classified                                                                           |
| Serious eye damage/irritation                       | : Not classified                                                                           |
| Respiratory or skin sensitization                   | : Not classified                                                                           |
| Germ cell mutagenicity                              | : Not classified                                                                           |
| Carcinogenicity                                     | : Not classified                                                                           |
| Reproductive toxicity                               | : Not classified                                                                           |
| STOT-single exposure                                | : Not classified                                                                           |
| STOT-repeated exposure                              | : Not classified                                                                           |
| Aspiration hazard                                   | : Not classified                                                                           |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                        |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after inhalation                   | : None under normal conditions.                                                            |
| Symptoms/effects after skin contact                 | : None under normal conditions.                                                            |
| Symptoms/effects after eye contact                  | : None under normal conditions.                                                            |
| Symptoms/effects after ingestion                    | : None under normal conditions.                                                            |

### SECTION 12 Ecological information

#### 12.1. Ecotoxicity

|                                                          |                                                                                                                        |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Ecology - general                                        | : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. |
| Hazardous to the aquatic environment, short-term (acute) | : Not classified                                                                                                       |

# Starch Solution

## Safety Data Sheet

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

Hazardous to the aquatic environment, long-term (chronic) : Not classified

### 12.2. Persistence and degradability

| Starch Solution               |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| Starch Solution           |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Ozone : Not classified  
Fluorinated greenhouse gases : No  
  
Other information : Avoid release to the environment.

## SECTION 13 Disposal considerations

Regional legislation (waste) : Disposal must be done according to official regulations.  
Waste treatment methods : Waste treatment methods.  
Sewage disposal recommendations : Disposal must be done according to official regulations.  
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Disposal must be done according to official regulations.  
  
Additional information : Do not re-use empty containers.  
Ecological waste information : Avoid release to the environment.

## SECTION 14 Transport information

In accordance with DOT / TDG / IATA

### 14.1. UN number

UN-No. (DOT) : Not applicable  
UN-No. (TDG) : Not applicable  
UN-No. (IATA) : Not applicable

### 14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not applicable  
Proper Shipping Name (TDG) : Not applicable  
Proper Shipping Name (IATA) : Not applicable

### 14.3. Transport hazard class(es)

**DOT**  
Transport hazard class(es) (DOT) : Not applicable

**TDG**  
Transport hazard class(es) (TDG) : Not applicable

# Starch Solution

## Safety Data Sheet

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

### IATA

Transport hazard class(es) (IATA) : Not applicable

### 14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (TDG) : Not applicable

Packing group (IATA) : Not applicable

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Transport in bulk

Not applicable

### 14.7. Special precautions for user

#### DOT

Not applicable

#### TDG

Not applicable

### IATA

Not applicable

## SECTION 15 Regulatory information

### 15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

No data available

### 15.2. International regulations

#### CANADA

No additional information available

#### EU-Regulations

No additional information available

#### National regulations

No additional information available

### 15.3. State regulations

No additional information available

## SECTION 16 Other information

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

Revision date : 1/17/2025

Date of issue : 11/30/2016

Other information : None.

### Abbreviations and acronyms

|       |                                                         |
|-------|---------------------------------------------------------|
| ACGIH | American Conference of Government Industrial Hygienists |
|-------|---------------------------------------------------------|

# Starch Solution

## Safety Data Sheet

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

| Abbreviations and acronyms |                                                                                                 |
|----------------------------|-------------------------------------------------------------------------------------------------|
| ADN                        | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR                        | European Agreement concerning the International Carriage of Dangerous Goods by Road             |
| ATE                        | Acute Toxicity Estimate                                                                         |
| BCF                        | Bioconcentration factor                                                                         |
| BLV                        | Biological limit value                                                                          |
| BOD                        | Biochemical oxygen demand (BOD)                                                                 |
| CAS-No.                    | Chemical Abstract Service number                                                                |
| CLP                        | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                     |
| COD                        | Chemical oxygen demand (COD)                                                                    |
| CSA                        | Chemical safety assessment                                                                      |
| DMEL                       | Derived Minimal Effect level                                                                    |
| DNEL                       | Derived-No Effect Level                                                                         |
| EC-No.                     | European Community number                                                                       |
| EC50                       | Median effective concentration                                                                  |
| ED                         | Endocrine disruptor                                                                             |
| EN                         | European Standard                                                                               |
| EWC                        | European waste catalogue                                                                        |
| IARC                       | International Agency for Research on Cancer                                                     |
| IATA                       | International Air Transport Association                                                         |
| IMDG                       | International Maritime Dangerous Goods                                                          |
| LC50                       | Median lethal concentration                                                                     |
| LD50                       | Median lethal dose                                                                              |
| LOAEL                      | Lowest Observed Adverse Effect Level                                                            |
| Log Kow                    | Partition coefficient n-octanol/water (Log Kow)                                                 |
| Log Pow                    | Partition coefficient n-octanol/water (Log Pow)                                                 |
| MAK                        | maximum workplace concentration                                                                 |
| NOAEC                      | No-Observed Adverse Effect Concentration                                                        |
| NOAEL                      | No-Observed Adverse Effect Level                                                                |
| NOEC                       | No-Observed Effect Concentration                                                                |
| N.O.S.                     | Not Otherwise Specified                                                                         |
| OECD                       | Organisation for Economic Co-operation and Development                                          |
| OEL                        | Occupational Exposure Limit                                                                     |
| OSHA                       | Occupational Safety & Health Administration                                                     |
| PBT                        | Persistent Bioaccumulative Toxic                                                                |
| PNEC                       | Predicted No-Effect Concentration                                                               |
| PPE                        | Personal protection equipment                                                                   |

# Starch Solution

## Safety Data Sheet

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

| Abbreviations and acronyms |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| RID                        | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS                        | Safety Data Sheet                                                            |
| STP                        | Sewage treatment plant                                                       |
| TF                         | Technical function                                                           |
| ThOD                       | Theoretical oxygen demand (ThOD)                                             |
| TLM                        | Median Tolerance Limit                                                       |
| TWA                        | Time Weighted Average                                                        |
| VOC                        | Volatile Organic Compounds                                                   |
| vPvB                       | Very Persistent and Very Bioaccumulative                                     |
| UFI                        | Unique Formula Identifier                                                    |

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



# Glucose Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Date of issue: 9/22/2016 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 9.0

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Mixture  
Product name : Glucose Solution  
Product code : G042

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

No additional information available

#### 1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.  
9800 Page Avenue  
St. Louis, MO 63132-1429, USA  
Tel. 1-800-628-7730  
[www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2 Hazard Identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Not classified

#### 2.2. Label elements

##### GHS US labeling

No labeling applicable

#### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

#### 2.4. Hazards not otherwise classified

No additional information available

#### 2.5. Unknown acute toxicity

No additional information available

### SECTION 3 Composition/information on ingredients

#### 3.1. Substances

Not applicable

# Glucose Solution

## Safety Data Sheet

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

### 3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria for section 3.2 of HCS

## SECTION 4 First aid measures

### 4.1. Description of necessary 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   | : Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.            |
| First-aid measures after skin contact | : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water. |
| First-aid measures after eye contact  | : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.  |
| First-aid measures after ingestion    | : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.              |
| Self protection of the first-aiders   | : First aid workers will be equipped with suitable personal protective equipment.                                                                 |

### 4.2. Most important symptoms/effects, acute and delayed

|                                                     |                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------|
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                        |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after inhalation                   | : None under normal conditions.                                                            |
| Symptoms/effects after skin contact                 | : None under normal conditions.                                                            |
| Symptoms/effects after eye contact                  | : None under normal conditions.                                                            |
| Symptoms/effects after ingestion                    | : None under normal conditions.                                                            |

### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

|                                   |                          |
|-----------------------------------|--------------------------|
| Other medical advice or treatment | : Treat symptomatically. |
|-----------------------------------|--------------------------|

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) 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. Specific hazards arising from the chemical

|                                                  |                                |
|--------------------------------------------------|--------------------------------|
| Fire hazard                                      | : No fire hazard.              |
| Explosion hazard                                 | : No direct explosion hazard.  |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |

### 5.3. Special protective equipment and precautions for fire-fighters

|                                |                                                                                                                                                                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Firefighting instructions      | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.                          |

# Glucose Solution

## Safety Data Sheet

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

### SECTION 6 Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

##### For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.  
Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel.

##### For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".  
Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.  
Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.2. Methods and materials for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.  
Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.  
Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

### SECTION 7 Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. 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 : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.  
Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

#### 7.2. Conditions for safe storage, including incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.  
Storage conditions : Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.  
Incompatible products : Strong bases. Strong acids.  
Incompatible materials : Sources of ignition. Direct sunlight.  
Packaging materials : Store always product in container of same material as original container.

### SECTION 8 Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

# Glucose Solution

## Safety Data Sheet

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

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures, such as personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

|                                                                                                 |
|-------------------------------------------------------------------------------------------------|
| <b>Hand protection:</b>                                                                         |
| Protective gloves. Wear protective gloves.                                                      |
| <b>Eye protection:</b>                                                                          |
| Chemical goggles or safety glasses. Safety glasses                                              |
| <b>Skin and body protection:</b>                                                                |
| Wear suitable protective clothing                                                               |
| <b>Respiratory protection:</b>                                                                  |
| In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate mask |

#### Personal protective equipment symbol(s):



#### Other information:

Do not eat, drink or smoke during use.

## SECTION 9 Physical and chemical properties

### 9.1. Basic physical and chemical properties

|                                                 |                                  |
|-------------------------------------------------|----------------------------------|
| Physical state                                  | : Liquid                         |
| Color                                           | : Colorless                      |
| Odor                                            | : characteristic                 |
| Odor threshold                                  | : No data available              |
| pH                                              | : No data available              |
| Melting point                                   | : Not applicable                 |
| Freezing point                                  | : No data available              |
| Boiling point                                   | : No data available              |
| Flash point                                     | : No data available              |
| Flammability (solid, gas)                       | : Not applicable. Non flammable. |
| Vapor pressure                                  | : No data available              |
| Relative vapor density at 20°C                  | : No data available              |
| Relative density                                | : No data available              |
| Solubility                                      | : No data available              |
| Partition coefficient n-octanol/water (Log Pow) | : No data available              |
| Auto-ignition temperature                       | : No data available              |
| Decomposition temperature                       | : No data available              |
| Viscosity, kinematic                            | : No data available              |
| Explosion limits                                | : No data available              |
| Particle characteristics                        | : No data available              |

### 9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

# Glucose Solution

## Safety Data Sheet

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

### SECTION 10 Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Stable under normal conditions. Not established.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

### SECTION 11 Toxicological information

#### 11.1. Information on toxicological effects

|                                                     |                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------|
| Acute toxicity (oral)                               | : Not classified                                                                           |
| Acute toxicity (dermal)                             | : Not classified                                                                           |
| Acute toxicity (inhalation)                         | : Not classified                                                                           |
| Skin corrosion/irritation                           | : Not classified                                                                           |
| Serious eye damage/irritation                       | : Not classified                                                                           |
| Respiratory or skin sensitization                   | : Not classified                                                                           |
| Germ cell mutagenicity                              | : Not classified                                                                           |
| Carcinogenicity                                     | : Not classified                                                                           |
| Reproductive toxicity                               | : Not classified                                                                           |
| STOT-single exposure                                | : Not classified                                                                           |
| STOT-repeated exposure                              | : Not classified                                                                           |
| Aspiration hazard                                   | : Not classified                                                                           |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                        |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after inhalation                   | : None under normal conditions.                                                            |
| Symptoms/effects after skin contact                 | : None under normal conditions.                                                            |
| Symptoms/effects after eye contact                  | : None under normal conditions.                                                            |
| Symptoms/effects after ingestion                    | : None under normal conditions.                                                            |

### SECTION 12 Ecological information

#### 12.1. Ecotoxicity

|                                                          |                                                                                                                        |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Ecology - general                                        | : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. |
| Hazardous to the aquatic environment, short-term (acute) | : Not classified                                                                                                       |

# Glucose Solution

## Safety Data Sheet

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

Hazardous to the aquatic environment, long-term (chronic) : Not classified

### 12.2. Persistence and degradability

| Glucose Solution              |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| Glucose Solution          |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Ozone : Not classified  
Fluorinated greenhouse gases : No  
Other information : Avoid release to the environment.

## SECTION 13 Disposal considerations

Regional legislation (waste) : Disposal must be done according to official regulations.  
Waste treatment methods : Waste treatment methods.  
Sewage disposal recommendations : Disposal must be done according to official regulations.  
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Disposal must be done according to official regulations.  
Additional information : Do not re-use empty containers.  
Ecological waste information : Avoid release to the environment.

## SECTION 14 Transport information

In accordance with DOT / TDG / IATA

### 14.1. UN number

UN-No. (DOT) : Not applicable  
UN-No. (TDG) : Not applicable  
UN-No. (IATA) : Not applicable

### 14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not applicable  
Proper Shipping Name (TDG) : Not applicable  
Proper Shipping Name (IATA) : Not applicable

### 14.3. Transport hazard class(es)

**DOT**  
Transport hazard class(es) (DOT) : Not applicable

**TDG**  
Transport hazard class(es) (TDG) : Not applicable

# Glucose Solution

## Safety Data Sheet

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

### IATA

Transport hazard class(es) (IATA) : Not applicable

### 14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (TDG) : Not applicable

Packing group (IATA) : Not applicable

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Transport in bulk

Not applicable

### 14.7. Special precautions for user

#### DOT

Not applicable

#### TDG

Not applicable

### IATA

Not applicable

## SECTION 15 Regulatory information

### 15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):  
No data available

### 15.2. International regulations

#### CANADA

No additional information available

#### EU-Regulations

No additional information available

#### National regulations

No additional information available

### 15.3. State regulations

No additional information available

## SECTION 16 Other information

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

Revision date : 1/17/2025

Date of issue : 9/22/2016

Other information : None.

### Abbreviations and acronyms

|       |                                                         |
|-------|---------------------------------------------------------|
| ACGIH | American Conference of Government Industrial Hygienists |
|-------|---------------------------------------------------------|

# Glucose Solution

## Safety Data Sheet

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

| Abbreviations and acronyms |                                                                                                 |
|----------------------------|-------------------------------------------------------------------------------------------------|
| ADN                        | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR                        | European Agreement concerning the International Carriage of Dangerous Goods by Road             |
| ATE                        | Acute Toxicity Estimate                                                                         |
| BCF                        | Bioconcentration factor                                                                         |
| BLV                        | Biological limit value                                                                          |
| BOD                        | Biochemical oxygen demand (BOD)                                                                 |
| CAS-No.                    | Chemical Abstract Service number                                                                |
| CLP                        | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                     |
| COD                        | Chemical oxygen demand (COD)                                                                    |
| CSA                        | Chemical safety assessment                                                                      |
| DMEL                       | Derived Minimal Effect level                                                                    |
| DNEL                       | Derived-No Effect Level                                                                         |
| EC-No.                     | European Community number                                                                       |
| EC50                       | Median effective concentration                                                                  |
| ED                         | Endocrine disruptor                                                                             |
| EN                         | European Standard                                                                               |
| EWC                        | European waste catalogue                                                                        |
| IARC                       | International Agency for Research on Cancer                                                     |
| IATA                       | International Air Transport Association                                                         |
| IMDG                       | International Maritime Dangerous Goods                                                          |
| LC50                       | Median lethal concentration                                                                     |
| LD50                       | Median lethal dose                                                                              |
| LOAEL                      | Lowest Observed Adverse Effect Level                                                            |
| Log Kow                    | Partition coefficient n-octanol/water (Log Kow)                                                 |
| Log Pow                    | Partition coefficient n-octanol/water (Log Pow)                                                 |
| MAK                        | maximum workplace concentration                                                                 |
| NOAEC                      | No-Observed Adverse Effect Concentration                                                        |
| NOAEL                      | No-Observed Adverse Effect Level                                                                |
| NOEC                       | No-Observed Effect Concentration                                                                |
| N.O.S.                     | Not Otherwise Specified                                                                         |
| OECD                       | Organisation for Economic Co-operation and Development                                          |
| OEL                        | Occupational Exposure Limit                                                                     |
| OSHA                       | Occupational Safety & Health Administration                                                     |
| PBT                        | Persistent Bioaccumulative Toxic                                                                |
| PNEC                       | Predicted No-Effect Concentration                                                               |
| PPE                        | Personal protection equipment                                                                   |

# Glucose Solution

## Safety Data Sheet

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

| Abbreviations and acronyms |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| RID                        | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS                        | Safety Data Sheet                                                            |
| STP                        | Sewage treatment plant                                                       |
| TF                         | Technical function                                                           |
| ThOD                       | Theoretical oxygen demand (ThOD)                                             |
| TLM                        | Median Tolerance Limit                                                       |
| TWA                        | Time Weighted Average                                                        |
| VOC                        | Volatile Organic Compounds                                                   |
| vPvB                       | Very Persistent and Very Bioaccumulative                                     |
| UFI                        | Unique Formula Identifier                                                    |

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



# Benedict's Qualitative Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Date of issue: 3/3/2016 Revision date: 10/31/2025 Supersedes: 1/17/2025 Version: 10.0

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Mixture  
Product name : Benedict's Qualitative Solution  
Product code : B125

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

No additional information available

#### 1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.  
9800 Page Avenue  
St. Louis, MO 63132-1429, USA  
Tel. 1-800-628-7730  
[www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2 Hazard Identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

|                                                                   |      |                                                    |
|-------------------------------------------------------------------|------|----------------------------------------------------|
| Serious eye damage/eye irritation, Category 2                     | H319 | Causes serious eye irritation.                     |
| Hazardous to the aquatic environment — Acute Hazard, Category 3   | H402 | Harmful to aquatic life.                           |
| Hazardous to the aquatic environment — Chronic Hazard, Category 3 | H412 | Harmful to aquatic life with long lasting effects. |

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning

Hazard statements (GHS US) : 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 hands, forearms and face thoroughly after handling.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 - If eye irritation persists: Get medical advice or attention.

# Benedict's Qualitative Solution

## Safety Data Sheet

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

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P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

### 2.4. Hazards not otherwise classified

No additional information available

### 2.5. Unknown acute toxicity

No additional information available

## SECTION 3 Composition/information on ingredients

### 3.1. Substances

Not applicable

# Benedict's Qualitative Solution

## Safety Data Sheet

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

### 3.2. Mixtures

| Name             | Common Name (Synonyms)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Product identifier | %       | GHS US classification |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|-----------------------|
| sodium carbonate | anhydrous soda / ash / bisodium carbonate / calcined soda(=sodium carbonate) / carbonic acid sodium salt / carbonic-acid-disodium-salt- / CASWELL NO. 752 / chrystol carbonate / chrystol carbonate (=sodium carbonate) / natural ash / Na-X / snowlite 1 / soda (=sodium carbonate) / soda ash / soda, crystals / sodium carbonate / sodium carbonate, anhydrous / sodium carbonate, anhydrous ASTM D458 / sodium carbonate, anhydrous GE materials D4D5 / sodium carbonate, anhydrous powder / sodium carbonate, crude / sodium carbonate, granular / Solvay soda / synthetic ash / washing soda (=sodiumcarbonate) | CAS-No.: 497-19-8  | 10 – 50 | Eye Irrit. 2, H319    |

# Benedict's Qualitative Solution

## Safety Data Sheet

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

| Name                             | Common Name (Synonyms)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Product identifier | %       | GHS US classification                                                                                                      |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|----------------------------------------------------------------------------------------------------------------------------|
| copper(II) sulfate, pentahydrate | blue copper / blue copperras / blue stone / blue viking / blue vitriol / chalcantite / chalcantite, natural / copper sulfate, pentahydrate / copper sulphate, pentahydrate / copper vitriol / copper(2+) sulfate, pentahydrate / couperose bleue / CSP (=copper(II)sulfate , pentahydrate) / cupric sulfate, pentahydrate / Environmentally hazardous substance, solid, n.o.s. / phyto-bordeaux (=copper(II)sulfate , pentahydrate) / phyton-27 (=copper(II)sulfate , pentahydrate) / roman vitriol (=copper(II)sulfate , pentahydrate) / sulfacop / sulfuric acid, copper(2+) salt (1:1), pentahydrate / sulfuric acid, copper(II)salt, pentahydrate / triangle(=copper(II) sulfate, pentahydrate) / vencedor | CAS-No.: 7758-99-8 | 0.5 – 2 | Acute Tox. 3 (Oral), H301<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |

Full text of hazard classes and H-statements : see section 16

## SECTION 4 First aid measures

### 4.1. Description of necessary first-aid measures

First-aid measures general : Call a physician immediately. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

# Benedict's Qualitative Solution

## Safety Data Sheet

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

|                                       |                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.                                                                                                                                                                                                                                                   |
| First-aid measures after skin contact | : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.                                                                                                                                                     |
| First-aid measures after eye contact  | : Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist. Do not apply neutralizing agents. Call a physician immediately. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| First-aid measures after ingestion    | : Do not induce vomiting. Call a physician immediately. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.                                                                                                                                                                                                                                                         |
| Self protection of the first-aiders   | : First aid workers will be equipped with suitable personal protective equipment.                                                                                                                                                                                                                                                                                                        |

### 4.2. Most important symptoms/effects, acute and delayed

|                                                     |                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------|
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                        |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after inhalation                   | : None under normal conditions.                                                            |
| Symptoms/effects after skin contact                 | : Burns.                                                                                   |
| Symptoms/effects after eye contact                  | : Irritation of the eye tissue. Serious damage to eyes. Eye irritation.                    |
| Symptoms/effects after ingestion                    | : Burns.                                                                                   |

### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

|                                   |                          |
|-----------------------------------|--------------------------|
| Other medical advice or treatment | : Treat symptomatically. |
|-----------------------------------|--------------------------|

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

|                                |                                                                             |
|--------------------------------|-----------------------------------------------------------------------------|
| Suitable extinguishing media   | : Sand. Water spray. Dry powder. Foam. Carbon dioxide.                      |
| Unsuitable extinguishing media | : No unsuitable extinguishing media known. Do not use a heavy water stream. |

### 5.2. Specific hazards arising from the chemical

|                                                  |                                |
|--------------------------------------------------|--------------------------------|
| Fire hazard                                      | : No fire hazard.              |
| Explosion hazard                                 | : No direct explosion hazard.  |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |

### 5.3. Special protective equipment and precautions for fire-fighters

|                                |                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Firefighting instructions      | : Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.                                                                                                                                                                      |

## SECTION 6 Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

|                  |                                                                                                                                         |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| General measures | : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage. |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------|

# Benedict's Qualitative Solution

## Safety Data Sheet

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

### For non-emergency personnel

- |                      |                                                                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Protective equipment | : Wear recommended personal protective equipment.                                                                                            |
| Emergency procedures | : Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapors/spray. Evacuate unnecessary personnel. Avoid contact with skin and eyes. |

### For emergency responders

- |                           |                                                                                                                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protective equipment      | : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection". |
| Emergency procedures      | : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.                                                                                                                          |
| Environmental precautions | : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.                                                            |

## 6.2. Methods and materials for containment and cleaning up

- |                         |                                                                                                                                                                                              |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For containment         | : Collect spillage. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.                                  |
| Methods for cleaning up | : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. |
| Other information       | : Dispose of materials or solid residues at an authorized site.                                                                                                                              |

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

- |                                   |                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Precautions for safe handling     | : Ensure good ventilation of the work station. Do not breathe dust/fume/gas/mist/vapors/spray. 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. Avoid contact with skin and eyes. Wear personal protective equipment. |
| Hygiene measures                  | : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.                                                                                                                                                                                                                       |
| Additional hazards when processed | : Not expected to present a significant hazard under anticipated conditions of normal use.                                                                                                                                                                                                                                                                         |

### 7.2. Conditions for safe storage, including incompatibilities

- |                        |                                                                                                                                            |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Technical measures     | : Keep in a cool, well-ventilated place away from heat.                                                                                    |
| Storage conditions     | : Store locked up. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. |
| Incompatible products  | : Strong bases. Strong acids.                                                                                                              |
| Incompatible materials | : Sources of ignition. Direct sunlight.                                                                                                    |
| Storage temperature    | : RT                                                                                                                                       |
| Packaging materials    | : Store always product in container of same material as original container.                                                                |

## SECTION 8 Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Appropriate engineering controls

- |                                  |                                                |
|----------------------------------|------------------------------------------------|
| Appropriate engineering controls | : Ensure good ventilation of the work station. |
| Environmental exposure controls  | : Avoid release to the environment.            |

# Benedict's Qualitative Solution

## Safety Data Sheet

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

### 8.3. Individual protection measures, such as personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

##### Hand protection:

Protective gloves. Wear protective gloves.

##### Eye protection:

Chemical goggles or safety glasses. Safety glasses

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate mask

#### Personal protective equipment symbol(s):



#### Other information:

Do not eat, drink or smoke during use.

## SECTION 9 Physical and chemical properties

### 9.1. Basic physical and chemical properties

|                                                 |                                  |
|-------------------------------------------------|----------------------------------|
| Physical state                                  | : Liquid                         |
| Color                                           | : Blue                           |
| Odor                                            | : characteristic                 |
| Odor threshold                                  | : No data available              |
| pH                                              | : No data available              |
| Melting point                                   | : Not applicable                 |
| Freezing point                                  | : No data available              |
| Boiling point                                   | : No data available              |
| Flash point                                     | : No data available              |
| Flammability (solid, gas)                       | : Not applicable. Non flammable. |
| Vapor pressure                                  | : No data available              |
| Relative vapor density at 20°C                  | : No data available              |
| Relative density                                | : No data available              |
| Solubility                                      | : No data available              |
| Partition coefficient n-octanol/water (Log Pow) | : No data available              |
| Auto-ignition temperature                       | : No data available              |
| Decomposition temperature                       | : No data available              |
| Viscosity, kinematic                            | : No data available              |
| Explosion limits                                | : No data available              |
| Particle characteristics                        | : No data available              |

### 9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

# Benedict's Qualitative Solution

## Safety Data Sheet

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

### SECTION 10 Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Stable under normal conditions. Not established.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

### SECTION 11 Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

#### copper(II) sulfate, pentahydrate (7758-99-8)

|                    |                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------|
| LD50 oral rat      | 300 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 482 mg/kg bodyweight; Rat) |
| LD50 dermal rabbit | > 2000 mg/kg (Rabbit; Literature study; OECD 402: Acute Dermal Toxicity)                      |
| ATE US (oral)      | 300 mg/kg body weight                                                                         |

#### sodium carbonate (497-19-8)

|                                   |                                                                                    |
|-----------------------------------|------------------------------------------------------------------------------------|
| LD50 oral rat                     | 2800 mg/kg (Rat, Male / female, Experimental value, Oral, 14 day(s))               |
| LD50 dermal rabbit                | > 2000 mg/kg (16 CFR 1500.40, 24 h, Rabbit, Experimental value, Dermal, 14 day(s)) |
| LC50 Inhalation - Rat (Dust/Mist) | 1.2 mg/l Source: SIDS                                                              |

Skin corrosion/irritation : Not classified

#### copper(II) sulfate, pentahydrate (7758-99-8)

|    |           |
|----|-----------|
| pH | 4 (3.2 %) |
|----|-----------|

#### sodium carbonate (497-19-8)

|    |                |
|----|----------------|
| pH | 11.6 (1 mol/l) |
|----|----------------|

Serious eye damage/irritation : Causes serious eye irritation.

#### copper(II) sulfate, pentahydrate (7758-99-8)

|    |           |
|----|-----------|
| pH | 4 (3.2 %) |
|----|-----------|

# Benedict's Qualitative Solution

## Safety Data Sheet

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

| sodium carbonate (497-19-8)                         |                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------|
| pH                                                  | 11.6 (1 mol/l)                                                                             |
| Respiratory or skin sensitization                   | : Not classified                                                                           |
| Germ cell mutagenicity                              | : Not classified                                                                           |
| Carcinogenicity                                     | : Not classified                                                                           |
| Reproductive toxicity                               | : Not classified                                                                           |
| STOT-single exposure                                | : Not classified                                                                           |
| STOT-repeated exposure                              | : Not classified                                                                           |
| Aspiration hazard                                   | : Not classified                                                                           |
| copper(II) sulfate, pentahydrate (7758-99-8)        |                                                                                            |
| Viscosity, kinematic                                | Not applicable                                                                             |
| sodium carbonate (497-19-8)                         |                                                                                            |
| Viscosity, kinematic                                | Not applicable                                                                             |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                        |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after inhalation                   | : None under normal conditions.                                                            |
| Symptoms/effects after skin contact                 | : Burns.                                                                                   |
| Symptoms/effects after eye contact                  | : Irritation of the eye tissue. Serious damage to eyes. Eye irritation.                    |
| Symptoms/effects after ingestion                    | : Burns.                                                                                   |

## SECTION 12 Ecological information

### 12.1. Ecotoxicity

|                                                           |                                                                               |
|-----------------------------------------------------------|-------------------------------------------------------------------------------|
| Ecology - general                                         | : Harmful to aquatic life. Harmful to aquatic life with long lasting effects. |
| Ecology - water                                           | : Harmful to aquatic life. Harmful to aquatic life with long lasting effects. |
| Hazardous to the aquatic environment, short-term (acute)  | : Harmful to aquatic life.                                                    |
| Hazardous to the aquatic environment, long-term (chronic) | : Harmful to aquatic life with long lasting effects.                          |

| copper(II) sulfate, pentahydrate (7758-99-8) |                                                                                                                                            |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Threshold limit - Algae [2]                  | 0.368 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Read-across) |
| sodium carbonate (497-19-8)                  |                                                                                                                                            |
| LC50 - Fish [1]                              | 300 mg/l (96 h, Lepomis macrochirus, Static system, Fresh water, Experimental value, Lethal)                                               |
| EC50 - Crustacea [1]                         | 200 – 227 mg/l (48 h, Ceriodaphnia sp., Semi-static system, Fresh water, Experimental value, Locomotor effect)                             |
| EC50 - Crustacea [2]                         | 200 – 227 mg/l Test organisms (species): Ceriodaphnia sp.                                                                                  |
| EC50 96h - Algae [1]                         | 242 mg/l Source: ECOTOX                                                                                                                    |

### 12.2. Persistence and degradability

| Benedict's Qualitative Solution              |                                                                                         |
|----------------------------------------------|-----------------------------------------------------------------------------------------|
| Persistence and degradability                | May cause long-term adverse effects in the environment.                                 |
| copper(II) sulfate, pentahydrate (7758-99-8) |                                                                                         |
| Persistence and degradability                | Biodegradability: not applicable, No (test)data on mobility of the substance available. |

# Benedict's Qualitative Solution

## Safety Data Sheet

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

| copper(II) sulfate, pentahydrate (7758-99-8) |                                                    |
|----------------------------------------------|----------------------------------------------------|
| Biochemical oxygen demand (BOD)              | Not applicable                                     |
| Chemical oxygen demand (COD)                 | Not applicable                                     |
| ThOD                                         | Not applicable                                     |
| sodium carbonate (497-19-8)                  |                                                    |
| Persistence and degradability                | Biodegradability: not applicable, Not established. |
| Chemical oxygen demand (COD)                 | Not applicable (inorganic)                         |
| ThOD                                         | Not applicable (inorganic)                         |

### 12.3. Bioaccumulative potential

| Benedict's Qualitative Solution                 |                                                        |
|-------------------------------------------------|--------------------------------------------------------|
| Bioaccumulative potential                       | Not established.                                       |
| copper(II) sulfate, pentahydrate (7758-99-8)    |                                                        |
| Bioaccumulative potential                       | Bioaccumable.                                          |
| sodium carbonate (497-19-8)                     |                                                        |
| Partition coefficient n-octanol/water (Log Pow) | -6.19 Source: Quantitative Structure Activity Relation |
| Bioaccumulative potential                       | Not bioaccumulative. Not established.                  |

### 12.4. Mobility in soil

| copper(II) sulfate, pentahydrate (7758-99-8) |                                       |
|----------------------------------------------|---------------------------------------|
| Ecology - soil                               | Toxic to flora.                       |
| sodium carbonate (497-19-8)                  |                                       |
| Surface tension                              | No data available in the literature   |
| Ecology - soil                               | Low potential for adsorption in soil. |

### 12.5. Other adverse effects

|                              |                                     |
|------------------------------|-------------------------------------|
| Ozone                        | : Not classified                    |
| Fluorinated greenhouse gases | : No                                |
| Other information            | : Avoid release to the environment. |

## SECTION 13 Disposal considerations

|                                            |                                                                                                                                                                                                                                                                                                |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regional legislation (waste)               | : Disposal must be done according to official regulations.                                                                                                                                                                                                                                     |
| Waste treatment methods                    | : Waste treatment methods.                                                                                                                                                                                                                                                                     |
| Sewage disposal recommendations            | : Disposal must be done according to official regulations.                                                                                                                                                                                                                                     |
| Product/Packaging disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Disposal must be done according to official regulations. |
| Additional information                     | : Do not re-use empty containers.                                                                                                                                                                                                                                                              |
| Ecological waste information               | : Avoid release to the environment.                                                                                                                                                                                                                                                            |

# Benedict's Qualitative Solution

## Safety Data Sheet

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

### SECTION 14 Transport information

In accordance with DOT / TDG / IATA

#### 14.1. UN number

Not regulated for transport

#### 14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not regulated  
Proper Shipping Name (TDG) : Not regulated  
Proper Shipping Name (IATA) : Not regulated

#### 14.3. Transport hazard class(es)

##### DOT

Transport hazard class(es) (DOT) : Not regulated

##### TDG

Transport hazard class(es) (TDG) : Not regulated

##### IATA

Transport hazard class(es) (IATA) : Not regulated

#### 14.4. Packing group

Packing group (DOT) : Not regulated  
Packing group (TDG) : Not regulated  
Packing group (IATA) : Not regulated

#### 14.5. Environmental hazards

Other information : No supplementary information available.

#### 14.6. Transport in bulk

Not applicable

#### 14.7. Special precautions for user

##### DOT

Not regulated

##### TDG

Not regulated

##### IATA

Not regulated

### SECTION 15 Regulatory information

#### 15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

| Name                             | CAS-No.   | Listing     | Commercial status | Flags |
|----------------------------------|-----------|-------------|-------------------|-------|
| copper(II) sulfate, pentahydrate | 7758-99-8 | Not present | -                 |       |
| sodium carbonate                 | 497-19-8  | Not present | -                 |       |

# Benedict's Qualitative Solution

## Safety Data Sheet

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

### 15.2. International regulations

#### CANADA

No additional information available

#### EU-Regulations

No additional information available

#### National regulations

No additional information available

### 15.3. State regulations

No additional information available

## SECTION 16 Other information

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

Revision date : 10/31/2025

Date of issue : 3/3/2016

Other information : None.

### Full text of hazard classes and H-statements

|      |                                                      |
|------|------------------------------------------------------|
| H301 | Toxic if swallowed                                   |
| H315 | Causes skin irritation                               |
| H319 | Causes serious eye irritation                        |
| H400 | Very toxic to aquatic life                           |
| H402 | Harmful to aquatic life                              |
| H410 | Very toxic to aquatic life with long lasting effects |
| H412 | Harmful to aquatic life with long lasting effects    |

### Abbreviations and acronyms

|         |                                                                                                 |
|---------|-------------------------------------------------------------------------------------------------|
| ACGIH   | American Conference of Government Industrial Hygienists                                         |
| ADN     | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR     | European Agreement concerning the International Carriage of Dangerous Goods by Road             |
| ATE     | Acute Toxicity Estimate                                                                         |
| BCF     | Bioconcentration factor                                                                         |
| BLV     | Biological limit value                                                                          |
| BOD     | Biochemical oxygen demand (BOD)                                                                 |
| CAS-No. | Chemical Abstract Service number                                                                |
| CLP     | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                     |
| COD     | Chemical oxygen demand (COD)                                                                    |
| CSA     | Chemical safety assessment                                                                      |
| DMEL    | Derived Minimal Effect level                                                                    |
| DNEL    | Derived-No Effect Level                                                                         |

# Benedict's Qualitative Solution

## Safety Data Sheet

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

| Abbreviations and acronyms |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| EC-No.                     | European Community number                                                    |
| EC50                       | Median effective concentration                                               |
| ED                         | Endocrine disruptor                                                          |
| EN                         | European Standard                                                            |
| EWC                        | European waste catalogue                                                     |
| IARC                       | International Agency for Research on Cancer                                  |
| IATA                       | International Air Transport Association                                      |
| IMDG                       | International Maritime Dangerous Goods                                       |
| LC50                       | Median lethal concentration                                                  |
| LD50                       | Median lethal dose                                                           |
| LOAEL                      | Lowest Observed Adverse Effect Level                                         |
| Log Kow                    | Partition coefficient n-octanol/water (Log Kow)                              |
| Log Pow                    | Partition coefficient n-octanol/water (Log Pow)                              |
| MAK                        | maximum workplace concentration                                              |
| NOAEC                      | No-Observed Adverse Effect Concentration                                     |
| NOAEL                      | No-Observed Adverse Effect Level                                             |
| NOEC                       | No-Observed Effect Concentration                                             |
| N.O.S.                     | Not Otherwise Specified                                                      |
| OECD                       | Organisation for Economic Co-operation and Development                       |
| OEL                        | Occupational Exposure Limit                                                  |
| OSHA                       | Occupational Safety & Health Administration                                  |
| PBT                        | Persistent Bioaccumulative Toxic                                             |
| PNEC                       | Predicted No-Effect Concentration                                            |
| PPE                        | Personal protection equipment                                                |
| RID                        | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS                        | Safety Data Sheet                                                            |
| STP                        | Sewage treatment plant                                                       |
| TF                         | Technical function                                                           |
| ThOD                       | Theoretical oxygen demand (ThOD)                                             |
| TLM                        | Median Tolerance Limit                                                       |
| TWA                        | Time Weighted Average                                                        |
| VOC                        | Volatile Organic Compounds                                                   |
| vPvB                       | Very Persistent and Very Bioaccumulative                                     |
| UFI                        | Unique Formula Identifier                                                    |

Safety Data Sheet (SDS), USA

# Benedict's Qualitative Solution

## Safety Data Sheet

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

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.