Safety Data Sheet

Cat. # 786-892

Bicinchoninic Acid (BCA) Protein Assay: Reducing Agent Compatible with Non Animal Protein Standard

Size: 250 Assays
RACA Reconstitution Buffer
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 04/08/2016 Revision date: 05/11/2017 Version: 7.1

SECTION 1: Identification

1.1. Identification
Product form: Substance
Substance name: RACA Reconstitution Buffer
Product code: 003R

1.2. Recommended use and restrictions on use
No additional information available

1.3. Supplier
Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
Saint Louis, 63132-1429 - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

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

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
GHS US classification
Not classified

2.2. GHS Label elements, including precautionary statements
GHS US labelling
No labeling applicable

2.3. Other hazards which do not result in classification
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Name: RACA Reconstitution Buffer

<table>
<thead>
<tr>
<th>Name</th>
<th>Common Name (Synonyms)</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt</td>
<td>(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt / 4,4'-dicarboxy-2,2'-biquinoline, disodium salt / bicinchoninic acid, disodium salt / disodium bicinchoninate / disodium-2,2-bicinchoninate</td>
<td>(CAS-No.) 979-88-4</td>
<td>0.5 - 2</td>
<td>Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>
RACA Reconstitution Buffer
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<table>
<thead>
<tr>
<th>Name</th>
<th>Common Name (Synonyms)</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
</table>
| sodium hydroxide            | anhydrous caustic soda / B751 / caustic alkali / caustic flake / caustic flakes / caustic soda / caustic soda, bead / caustic soda, dry / caustic soda, flake / caustic soda, granular / caustic soda, lye / caustic soda, solid / caustic white / caustic, flaked / hydrate of soda / hydrate of sodium / hydroxide of soda / hydroxide of sodium / LEWIS red devil lye / lye (=sodium hydroxide) / soda lye / soda, caustic / soda, hydrate / sodium hydrate / sodium hydrate lye / sodium hydroxide / sodium hydroxide (Na(OH)) / sodium hydroxide, bead / sodium hydroxide, dry / sodium hydroxide, flake / sodium hydroxide, granular / sodium hydroxide, pellets / sodium hydroxide, solid / white caustic | (CAS-No.) 1310-73-2 | 0.05 - 0.5 | Met. Corr. 1, H290  
Skin Corr. 1, H314  
Aquatic Acute 3, H402 |

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

### 3.2. Mixtures
Not applicable

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures
- **First-aid measures after inhalation**: Remove person to fresh air and keep comfortable for breathing.
- **First-aid measures after skin contact**: Wash skin with plenty of water.
- **First-aid measures after eye contact**: Rinse eyes with water as a precaution.
- **First-aid measures after ingestion**: Call a poison center/doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects (acute and delayed)
No additional information available

#### 4.3. Immediate medical attention and special treatment, if necessary
Treat symptomatically.

### SECTION 5: Fire-fighting measures

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

#### 5.2. Specific hazards arising from the chemical
No additional information available

#### 5.3. Special protective equipment and precautions for fire-fighters
Protection during firefighting: 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

##### 6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area.

##### 6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions
Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up
- **Methods for cleaning up**: Take up liquid spill into absorbent material.
- **Other information**: Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections
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.

Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>RACA Reconstitution Buffer</th>
<th>No additional information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium carbonate (497-19-8)</td>
<td>No additional information available</td>
</tr>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>USA - ACGIH - Occupational Exposure Limits</td>
</tr>
<tr>
<td>(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)</td>
<td>ACGIH Ceiling (mg/m³) 2 mg/m³</td>
</tr>
</tbody>
</table>

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/Personal protective equipment

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
</tbody>
</table>
RACA Reconstitution Buffer
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Solubility : No data available
Log Pow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosion limits : No data available
Explosive properties : No data available
Oxidizing properties : No data available

9.2. Other information
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.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

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

sodium carbonate (497-19-8)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>2800 mg/kg (Rat, Male / female, Experimental value, Oral, 14 day(s))</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2000 mg/kg (16 CFR 1500. 40, 24 h, Rabbit, Experimental value, Dermal)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>2.3 mg/l (2 h, Rat, Male, Experimental value, Inhalation (aerosol))</td>
</tr>
</tbody>
</table>

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

Specific target organ toxicity – single exposure : Not classified
Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified
Viscosity, kinematic : No data available
SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

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

- **LC50 fish 1**: 300 mg/l (96 h, Lepomis macrochirus, Static system, Fresh water, Experimental value, Lethal)
- **EC50 Daphnia 1**: 200 - 227 mg/l (48 h, Ceriodaphnia sp., Semi-static system, Fresh water, Experimental value, Locomotor effect)

**sodium hydroxide (1310-73-2)**

- **LC50 fish 1**: 45.4 mg/l (96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Solution >=50%)
- **EC50 Daphnia 1**: 40.4 mg/l (48 h, Ceriodaphnia sp., Experimental value, Nominal concentration)

12.2. Persistence and degradability

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

- Persistence and degradability: Biodegradability: not applicable.
- Chemical oxygen demand (COD): Not applicable (inorganic)
- ThOD: Not applicable (inorganic)

**sodium hydroxide (1310-73-2)**

- Persistence and degradability: Biodegradability: not applicable.
- Chemical oxygen demand (COD): Not applicable (inorganic)
- ThOD: Not applicable (inorganic)

**(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)**

- Persistence and degradability in water: no data available.

12.3. Bioaccumulative potential

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

- Log Pow: -6.19 (Estimated value)
- Bioaccumulative potential: Not bioaccumulative.

**sodium hydroxide (1310-73-2)**

- Bioaccumulative potential: Not bioaccumulative.

**(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)**

- Bioaccumulative potential: No bioaccumulation data available.

12.4. Mobility in soil

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

- Ecology - soil: Low potential for adsorption in soil.

**sodium hydroxide (1310-73-2)**

- Ecology - soil: No (test)data on mobility of the substance available.

12.5. Other adverse effects

No additional information available.

SECTION 13: Disposal considerations

13.1. Disposal methods


SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT

Other information: No supplementary information available.
Transportation of Dangerous Goods

Transport by sea
Not regulated

Air transport
Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RACA Reconstitution Buffer</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>sodium carbonate (497-19-8)</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>

RACA Reconstitution Buffer

Not subject to reporting requirements of the United States SARA Section 313

| CERCLA RO | 1000 lb |

15.2. International regulations

CANADA

EU-Regulations

National regulations
No additional information available

15.3. US State regulations

SECTION 16: Other information

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

Revision date : 05/11/2017

Full text of H-phrases:

| H290 | May be corrosive to metals |
| H314 | Causes severe skin burns and eye damage |
| H319 | Causes serious eye irritation |
| H402 | Harmful to aquatic life |

SDS US (GHS HazCom 2012)

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.
Reducing Agent Compatibility Agent (RACA)

Safety Data Sheet

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

Date of issue: 06/10/2013    Revision date: 05/11/2017    Version: 7.1

SECTION 1: Identification

1.1. Identification

Product form: Substance
Substance name: Reducing Agent Compatibility Agent (RACA)
Product code: 017R

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
Saint Louis, 63132-1429 - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

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

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification
Acute toxicity (oral) Category 3  H301  Toxic if swallowed
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling
Hazard pictograms (GHS US):

Signal word (GHS US): Danger
Hazard statements (GHS US): H301 - Toxic if swallowed
Precautionary statements (GHS US):
- P264 - Wash hands, forearms and face thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P301+P310 - If swallowed: Immediately call a poison center or doctor
- P321 - Specific treatment (see supplemental first aid instruction on this label)
- P330 - Rinse mouth.
- P405 - Store locked up.
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name: Reducing Agent Compatibility Agent (RACA)

<table>
<thead>
<tr>
<th>Name</th>
<th>Common Name (Synonyms)</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-iodoacetamide</td>
<td>2-iodoacetamide / acetamide, 2-iodo- / alpha-iodoacetamide / iodoacetamide / monooiodoacetamide / suroauto / USAF D1</td>
<td>(CAS-No.) 144-48-9</td>
<td>100</td>
<td>Acute Tox. 3 (Oral), H301</td>
</tr>
</tbody>
</table>
Reducing Agent Compatibility Agent (RACA)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

3.2. Mixtures
Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures general: Call a physician immediately.
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Wash skin with plenty of water.
First-aid measures after eye contact: Rinse eyes with water as a precaution.
First-aid measures after ingestion: Rinse mouth. Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)
No additional information available

4.3. Immediate medical attention and special treatment, if necessary
Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

5.2. Specific hazards arising from the chemical
No additional information available

5.3. Special protective equipment and precautions for fire-fighters
Protection during firefighting: 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

6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Mechanically recover the product.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
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.
Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store locked up. Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Reducing Agent Compatibility Agent (RACA)
No additional information available
Reducing Agent Compatibility Agent (RACA)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>2-iodoacetamide (144-48-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No additional information available</td>
</tr>
</tbody>
</table>

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/Personal protective equipment**

**Hand protection:**
Protective gloves

**Eye protection:**
Safety glasses

**Skin and body protection:**
Wear suitable protective clothing

**Respiratory protection:**
In case of insufficient ventilation, wear suitable respiratory equipment

**SECTION 9: Physical and chemical properties**

9.1. **Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
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<tr>
<td>Log Pow</td>
<td>No data available</td>
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<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. **Other information**

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.

10.2. **Chemical stability**
Stable under normal conditions.
### 10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials
No additional information available.

### 10.6. Hazardous decomposition products
Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Toxic if swallowed.</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>100 mg/kg body weight</td>
</tr>
</tbody>
</table>

#### 2-iodoacetamide (144-48-9)

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
<td>100 mg/kg body weight</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### 12.1. Toxicity

Ecology - general: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

### 12.2. Persistence and degradability

#### 2-iodoacetamide (144-48-9)

<table>
<thead>
<tr>
<th>Persistence and degradability</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodegradability in water</td>
<td>no data available</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

#### 2-iodoacetamide (144-48-9)

<table>
<thead>
<tr>
<th>Log Pow</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1.953 (QSAR)</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

### 12.4. Mobility in soil

No additional information available.

### 12.5. Other adverse effects

No additional information available.
Reducing Agent Compatibility Agent (RACA)

Safety Data Sheet

SECTION 13: Disposal considerations

13.1. Disposal methods

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Other information: No supplementary information available.

Transportation of Dangerous Goods

Transport by sea
Not regulated

Air transport
Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

Reducing Agent Compatibility Agent (RACA)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

2-iodoacetamide (144-48-9)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

EU-Regulations

National regulations
No additional information available

15.3. US State regulations

SECTION 16: Other information

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

Revision date: 05/11/2017

Full text of H-phrases:

| H301 | Toxic if swallowed |

SDS US (GHS HazCom 2012)

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.
BCA Solution (BCA Reagent A)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 04/08/2016 Revision date: 05/11/2017 Version: 7.1

SECTION 1: Identification

1.1. Identification
Product form: Mixture
Product name: BCA Solution (BCA Reagent A)
Product code: 030B

1.2. Recommended use and restrictions on use
No additional information available

1.3. Supplier
Geno Technology, Inc./G-Biosciences
9800 Page Avenue
Saint Louis, 63132-1429 - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

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

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
GHS US classification
Not classified

2.2. GHS Label elements, including precautionary statements
GHS US labelling
No labeling applicable

2.3. Other hazards which do not result in classification
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Common Name (Synonyms)</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
</table>

| (2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt | (2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt / 4,4'-dicarboxy-2,2'-biquinoline, disodium salt / bicinchoninic acid, disodium salt / disodium bicinchoninate / disodium-2,2-bicinchoninate | (CAS-No.) 979-88-4 | 0.5 - 2 | Eye Irrit. 2, H319 |
Full text of hazard classes and H-statements: see section 16

**SECTION 4: First-aid measures**

4.1. **Description of first aid measures**
- First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact: Wash skin with plenty of water.
- First-aid measures after eye contact: Rinse eyes with water as a precaution.
- First-aid measures after ingestion: Call a poison center/doctor/physician if you feel unwell.

4.2. **Most important symptoms and effects (acute and delayed)**
No additional information available

4.3. **Immediate medical attention and special treatment, if necessary**
Treat symptomatically.

**SECTION 5: Fire-fighting measures**

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

5.2. **Specific hazards arising from the chemical**
No additional information available

5.3. **Special protective equipment and precautions for fire-fighters**
Protection during firefighting: 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**

6.1.1. **For non-emergency personnel**
Emergency procedures: Ventilate spillage area.

6.1.2. **For emergency responders**
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. **Environmental precautions**
Avoid release to the environment.

6.3. **Methods and material for containment and cleaning up**
Methods for cleaning up: Take up liquid spill into absorbent material.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. **Reference to other sections**
For further information refer to section 13.
BCA Solution (BCA Reagent A)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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.

Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>Control Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCA Solution (BCA Reagent A)</td>
<td>No additional information available</td>
</tr>
<tr>
<td>sodium carbonate (497-19-8)</td>
<td>No additional information available</td>
</tr>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>USA - ACGIH - Occupational Exposure Limits</td>
</tr>
<tr>
<td>(2,2’-biquinoline)-4,4’-dicarboxylic acid, disodium salt (979-88-4)</td>
<td>ACGIH Ceiling (mg/m³) 2 mg/m³</td>
</tr>
</tbody>
</table>

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/Personal protective equipment

Hand protection: Protective gloves

Eye protection: Safety glasses

Skin and body protection: Wear suitable protective clothing.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
</tbody>
</table>
BCA Solution (BCA Reagent A)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Solubility : No data available
Log Pow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosion limits : No data available
Explosive properties : No data available
Oxidizing properties : No data available

9.2. Other information
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.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

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

<table>
<thead>
<tr>
<th>sodium carbonate (497-19-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
</tr>
</tbody>
</table>

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
Specific target organ toxicity – single exposure : Not classified
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified
Viscosity, kinematic : No data available
## SECTION 12: Ecological information

### 12.1. Toxicity

**Ecology - general**: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50</th>
<th>EC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium carbonate (497-19-8)</td>
<td>300 mg/l (96 h, Lepomis macrochirus, Static system, Fresh water, Experimental value, Lethal)</td>
<td></td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>200 - 227 mg/l (48 h, Ceriodaphnia sp., Semi-static system, Fresh water, Experimental value, Locomotor effect)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50</th>
<th>EC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>45.4 mg/l (96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Solution &gt;=50%)</td>
<td></td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>40.4 mg/l (48 h, Ceriodaphnia sp., Experimental value, Nominal concentration)</td>
<td></td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
<th>Chemical oxygen demand (COD)</th>
<th>ThOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium carbonate (497-19-8)</td>
<td>Biodegradability: not applicable.</td>
<td>Not applicable (inorganic)</td>
<td></td>
</tr>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>Biodegradability: not applicable.</td>
<td>Not applicable (inorganic)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
<th>Chemical oxygen demand (COD)</th>
<th>ThOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)</td>
<td>Biodegradability in water: no data available.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>Log Pow</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium carbonate (497-19-8)</td>
<td>-6.19 (Estimated value)</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td></td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)</td>
<td>No bioaccumulation data available.</td>
</tr>
</tbody>
</table>

### 12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium carbonate (497-19-8)</td>
<td>Low potential for adsorption in soil.</td>
</tr>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
</tbody>
</table>

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

**Waste treatment methods**: Waste treatment methods.

## SECTION 14: Transport information

**Department of Transportation (DOT)**

In accordance with DOT

**Other information**: No supplementary information available.
BCA Solution (BCA Reagent A)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Transportation of Dangerous Goods

Transport by sea
Not regulated

Air transport
Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>BCA Solution (BCA Reagent A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium carbonate (497-19-8)</td>
</tr>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
</tr>
<tr>
<td>(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)</td>
</tr>
</tbody>
</table>

| CerCLA RO | 1000 lb |

15.2. International regulations

CANADA

EU-Regulations

National regulations
No additional information available

15.3. US State regulations

SECTION 16: Other information

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

Revision date : 05/11/2017

Full text of H-phrases:

| H290 | May be corrosive to metals |
| H314 | Causes severe skin burns and eye damage |
| H319 | Causes serious eye irritation |
| H402 | Harmful to aquatic life |

SDS US (GHS HazCom 2012)

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.
**SECTION 1: Identification**

1.1. Identification

Product form : Mixture
Product name : Non Animal Protein 2mg/ml
Product code : 136N

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Research and development

1.3. Supplier

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
Saint Louis, 63132-1429 - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

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

**SECTION 2: Hazard(s) identification**

2.1. Classification of the substance or mixture

GHS US classification
Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labelling
No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

**SECTION 3: Composition/Information on ingredients**

3.1. Substances

Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Common Name (Synonyms)</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
</table>
| 2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride | 1,3-propanediol, 2-amino-2- (hydroxymethyl)-, hydrochloride / 2-amino-2- (hydroxymethyl)propane-1,3-diol hydrochloride / alpha,alpha,alpha-tris(hydroxymethyl)methylamin, hydrochloride / tris HCl / tris hydrochloride / tris(hydroxymethyl)amonimethane, hydrochloride / tromethamine, hydrochloride / tromethane, hydrochloride | (CAS-No.) 1185-53-1 | < 2 | Skin Irrit. 2, H315
| Eye Irrit. 2, H319
| STOT SE 3, H335 |
| kathon CG | reaction mass of: 5-chloro-2- methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-4- isothiazolin-3-one [EC no. 220-239-6] (3:1) | (CAS-No.) 55965-84-9 | < 0.04 | Acute Tox. 3 (Inhalation), H331
| Skin Corr. 1B, H314
| Skin Sens. 1, H317
| Aquatic Acute 1, H400
| Aquatic Chronic 1, H410 |
Non Animal Protein 2mg/ml
Safety Data Sheet
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<table>
<thead>
<tr>
<th>Name</th>
<th>Common Name (Synonyms)</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide</td>
<td>anhydrous caustic soda / B751 / caustic alkali / caustic flake / caustic flakes / caustic soda / caustic soda, bead / caustic soda, dry / caustic soda, flake / caustic soda, granular / caustic soda, lye / caustic soda, solid / caustic white / caustic, flaked / hydrate of soda / hydrate of sodium / hydroxide of soda / hydroxide of sodium / LEWIS red devil lye / lye (=sodium hydroxide) / soda lye / soda, caustic / soda, hydrate / sodium hydrate / sodium hydrate lye / sodium hydroxide / sodium hydroxide (Na(OH)) / sodium hydroxide, bead / sodium hydroxide, dry / sodium hydroxide, flake / sodium hydroxide, granular / sodium hydroxide, pellets / sodium hydroxide, solid / white caustic</td>
<td>(CAS-No.) 1310-73-2</td>
<td>100%</td>
<td>Met. Corr. 1, H290</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 3, H402</td>
</tr>
</tbody>
</table>

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

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact: Rinse eyes with water as a precaution.

First-aid measures after ingestion: Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact: May cause an allergic skin reaction.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting: 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

6.1.1. For non-emergency personnel

Emergency procedures: Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Take up liquid spill into absorbent material.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.
Non Animal Protein 2mg/ml
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray.

Hygiene measures:
Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions:
Store in a well-ventilated place. Keep cool.

Storage temperature:
-20 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Non Animal Protein 2mg/ml
No additional information available

kathon CG (55965-84-9)
No additional information available

sodium hydroxide (1310-73-2)
USA - ACGIH - Occupational Exposure Limits
ACGIH Ceiling (mg/m³) 2 mg/m³

2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)
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.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Color: No data available
Odor: No data available
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
Relative evaporation rate (butyl acetate=1): No data available
Flammability (solid, gas): Not applicable.
Non Animal Protein 2mg/ml
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Vapor pressure : No data available
Relative vapor density at 20 °C : No data available
Relative density : No data available
Solubility : No data available
Log Pow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosion limits : No data available
Explosive properties : No data available
Oxidizing properties : No data available

9.2. Other information
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.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

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

**kathon CG (55965-84-9)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 2000 mg/kg (Rat)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 5000 mg/kg (Rabbit)</td>
</tr>
<tr>
<td>ATE US (gases)</td>
<td>700 ppmV/4h</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>3 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>0.5 mg/l/4h</td>
</tr>
</tbody>
</table>

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
Specific target organ toxicity – single exposure : Not classified
Non Animal Protein 2mg/ml  
Safety Data Sheet  
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 12: Ecological information

#### 12.1. Toxicity

**Ecology - general**: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>45.4 mg/l (96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Solution &gt;=50%)</td>
<td>40.4 mg/l (48 h, Ceriodaphnia sp., Experimental value, Nominal concentration)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

**kathon CG (55965-84-9)**
- Persistence and degradability: Contains non readily biodegradable component(s).

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable (inorganic)</td>
</tr>
</tbody>
</table>

**2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)**
- Persistence and degradability: Biodegradability in water: no data available.

#### 12.3. Bioaccumulative potential

**kathon CG (55965-84-9)**
- Bioaccumulative potential: Does not contain bioaccumulative component(s).

<table>
<thead>
<tr>
<th>Substance</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

**2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)**
- Bioaccumulative potential: No bioaccumulation data available.

#### 12.4. Mobility in soil

**kathon CG (55965-84-9)**
- Ecology - soil: No (test)data on mobility of the components available.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
</tbody>
</table>

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Non Animal Protein 2mg/ml
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT

Other information : No supplementary information available.

Transportation of Dangerous Goods

Transport by sea
Not regulated

Air transport
Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>kathon CG (55965-84-9)</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>CERCLA RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>1000 lb</td>
</tr>
</tbody>
</table>

15.2. International regulations

CANADA

EU-Regulations

National regulations
No additional information available

15.3. US State regulations

SECTION 16: Other information

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

Revision date : 05/11/2017
Non Animal Protein 2mg/ml
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases:

| H290 | May be corrosive to metals |
| H314 | Causes severe skin burns and eye damage |
| H315 | Causes skin irritation |
| H317 | May cause an allergic skin reaction |
| H319 | Causes serious eye irritation |
| H331 | Toxic if inhaled |
| H335 | May cause respiratory irritation |
| H400 | Very toxic to aquatic life |
| H402 | Harmful to aquatic life |
| H410 | Very toxic to aquatic life with long lasting effects |

SDS US (GHS HazCom 2012)
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.
### SECTION 1: Identification

1. **Identification**

   **Product form**: Mixture  
   **Product name**: Copper Solution (BCA Reagent B)  
   **Product code**: 274C

2. **Recommended use and restrictions on use**

   No additional information available

3. **Supplier**

   Geno Technology, Inc./ G-Biosciences  
   9800 Page Avenue  
   Saint Louis, 63132-1429 - United States  
   T 800-628-7730 - F 314-991-1504  
   technical@GBiosciences.com - www.GBiosciences.com

4. **Emergency telephone number**

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

### SECTION 2: Hazard(s) identification

1. **Classification of the substance or mixture**

   **Hazardous to the aquatic environment - Acute Hazard Category 2** H401 Toxic to aquatic life  
   **Hazardous to the aquatic environment - Chronic Hazard Category 2** H411 Toxic to aquatic life with long lasting effects

   Full text of H statements: see section 16

2. **GHS Label elements, including precautionary statements**

   **GHS US labeling**

   **Hazard pictograms (GHS US)**: 🔴

   **Hazard statements (GHS US)**:  
   - H401 - Toxic to aquatic life  
   - H411 - Toxic to aquatic life with long lasting effects

   **Precautionary statements (GHS US)**:  
   - P273 - Avoid release to the environment.  
   - P391 - Collect spillage.  
   - P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

3. **Other hazards which do not result in classification**

   No additional information available

4. **Unknown acute toxicity (GHS US)**

   Not applicable

### SECTION 3: Composition/Information on ingredients

1. **Substances**

   Not applicable

2. **Mixtures**

   Not applicable
Copper Solution (BCA Reagent B)  
Safety Data Sheet  
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Name</th>
<th>Common Name (Synonyms)</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
</table>
| copper(II) sulfate, pentahydrate | blue copper / blue copperras / blue stone / blue viking / blue vitriol / chalcanthite / chalcanthite, 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 | 2 - 5 | Acute Tox. 3 (Oral), H301  
Skin Irrit. 2, H315  
Eye Irrit. 2, H319  
Aquatic Acute 1, H400  
Aquatic Chronic 1, H410 |

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

**SECTION 4: First-aid measures**

4.1. **Description of first aid measures**

   - **First-aid measures after inhalation**: Remove person to fresh air and keep comfortable for breathing.
   - **First-aid measures after skin contact**: Wash skin with plenty of water.
   - **First-aid measures after eye contact**: Rinse eyes with water as a precaution.
   - **First-aid measures after ingestion**: Call a poison center/doctor/physician if you feel unwell.

4.2. **Most important symptoms and effects (acute and delayed)**

No additional information available

4.3. **Immediate medical attention and special treatment, if necessary**

Treat symptomatically.

**SECTION 5: Fire-fighting measures**

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


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

No additional information available

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

Protection during firefighting: 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**

6.1.1. **For non-emergency personnel**

Emergency procedures: Ventilate spillage area.

6.1.2. **For emergency responders**

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. **Environmental precautions**

Avoid release to the environment.

6.3. **Methods and material for containment and cleaning up**

For containment: Collect spillage.

Methods for cleaning up: Take up liquid spill into absorbent material.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. **Reference to other sections**

For further information refer to section 13.
Copper Solution (BCA Reagent B)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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.
Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well-ventilated place. Keep cool.
Storage temperature: ambient temperature

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Copper Solution (BCA Reagent B)
No additional information available

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

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Color: No data available
Odor: No data available
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
Relative evaporation rate (butyl acetate=1): No data available
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
Log Pow: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Copper Solution (BCA Reagent B)

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Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosion limits: No data available
Explosive properties: No data available
Oxidizing properties: No data available

9.2 Other information
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.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4 Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5 Incompatible materials
No additional information available

10.6 Hazardous decomposition products
Hazardous decomposition products.

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

<table>
<thead>
<tr>
<th>copper(II) sulfate, pentahydrate (7758-99-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

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
Specific target organ toxicity – single exposure: Not classified
Specific target organ toxicity – repeated exposure: Not classified
Aspiration hazard: Not classified
Viscosity, kinematic: No data available

SECTION 12: Ecological information

12.1 Toxicity
Ecology - general: Toxic to aquatic life with long lasting effects. Toxic to aquatic life.

<table>
<thead>
<tr>
<th>copper(II) sulfate, pentahydrate (7758-99-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold limit algae 2</td>
</tr>
</tbody>
</table>
Copper Solution (BCA Reagent B)  
Safety Data Sheet  
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.2. Persistence and degradability  
<table>
<thead>
<tr>
<th>compound</th>
<th>Persistence and degradability</th>
<th>Biodegradability: not applicable. No (test)data on mobility of the substance available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper(II) sulfate, pentahydrate (7758-99-8)</td>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential  
<table>
<thead>
<tr>
<th>compound</th>
<th>Bioaccumulative potential</th>
<th>Bioaccumulable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper(II) sulfate, pentahydrate (7758-99-8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.4. Mobility in soil  
<table>
<thead>
<tr>
<th>compound</th>
<th>Ecology - soil</th>
<th>Toxic to flora.</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper(II) sulfate, pentahydrate (7758-99-8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.5. Other adverse effects  
No additional information available

SECTION 13: Disposal considerations  
13.1. Disposal methods  

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT

Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III
UN-No.(DOT) : UN3082
Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s.
Class (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Packing group (DOT) : III - Minor Danger
Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)

Dangerous for the environment : Yes
Marine pollutant : Yes

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Symbols : G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102): 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies. 146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination. 173 - An appropriate generic entry may be used for this material. 335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging.  
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).  
T4 - 2.65 178.274(d)(2) Normal............. 178.275(d)(3)  
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.  
TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.  
DOT Packaging Exceptions (49 CFR 173.xxx): 155  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27): No limit  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75): No limit  
DOT Vessel Stowage Location: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.  
Other information: No supplementary information available.  

Transportation of Dangerous Goods  
Transport by sea  
Marine pollutant: Yes  

Air transport  

SECTION 15: Regulatory information  
15.1. US Federal regulations  
copper(II) sulfate, pentahydrate (7758-99-8)  
Not listed on the United States TSCA (Toxic Substances Control Act) inventory  

15.2. International regulations  
CANADA  
EU-Regulations  
National regulations: No additional information available
### SECTION 16: Other information

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
<tr>
<td>H401</td>
<td>Toxic to aquatic life</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

SDS US (GHS HazCom 2012)

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