Safety Data Sheet

Cat. # 786-891

Bicinchoninic Acid (BCA) Protein Assay

Size: 1,000 Assays/ 5,000 Micro-assays
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 labeling
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
Not applicable
<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 / 2,2'-Bicinchoninsäure, Dinatriumsalz / 2,2'-Dichinolyl-4,4'-dicarbonsäure, Dinatriumsalz / 4,4'-dicarboxy-2,2'-biquinoline, disodium salt / BCA (=2,2'-Bichinolin)-4,4'-dicarbonsäure, Dinatriumsalz) / bicinchoninonic acid, disodium salt / Dinatrium-(2,2'-bichinolin)-4,4'-dicarboxylat / 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>
<tr>
<td>sodium hydroxide</td>
<td>anhydrous caustic soda / Atzsoda / 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 / Collo-grillrein / Collo-tapetta / hydrate of soda / hydrate of sodium / hydrate of soda / hydrate of sodium / lessive alcaline / lessive de soude caustique / LEWIS red devil lye / lye (=sodium hydroxide) / natrium hydricum / Natriumoxihydrat / Natriumoxhydroxid / Natron / natronlut / Seifenstein / soda lye / soda, caustic / soda, hydrate / sodio idrossido / sodium (hydroxyde de) / 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 / soude (=hydroxyde de sodium) / white caustic</td>
<td>(CAS-No.) 1310-73-2</td>
<td>0.05 - 0.5</td>
<td>Met. Corr. 1, H290 Skin Corr. 1A, H314 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.
BCA Solution (BCA Reagent A)
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

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: Irritation.
Symptoms/effects after eye contact: Eye irritation.

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

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.

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. Avoid contact with skin and eyes.

Hygiene measures: Wash contaminated clothing before reuse. 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

sodium carbonate (497-19-8)
Not applicable

sodium hydroxide (1310-73-2)
Not applicable

(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)
Not applicable
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
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**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium carbonate (497-19-8)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>2800 mg/kg (Rat, Male/female, Experimental value)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2000 mg/kg (16 CFR 1500, 40, 24 h, Rabbit, Experimental value)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>2.3 mg/l (2 h, Rat, Male, Experimental value)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>Irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>Eye irritation.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide (1310-73-2)</td>
<td></td>
</tr>
<tr>
<td>LC50 fish 1</td>
<td>45.4 mg/l (Other, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>40.4 mg/l (Other, 48 h, Ceriodaphnia sp., Experimental value)</td>
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</table>

12.2. **Persistence and degradability**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium carbonate (497-19-8)</td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable (inorganic)</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>

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

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

<table>
<thead>
<tr>
<th>Persistence and degradability</th>
<th>Biodegradability in water: no data available.</th>
</tr>
</thead>
</table>

12.3. Bioaccumulative potential

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

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

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

12.4. Mobility in soil

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>Ecology - soil</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


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

BCA Solution (BCA Reagent A)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

sodium carbonate (497-19-8)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory
BCA Solution (BCA Reagent A)  
Safety Data Sheet  
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS Number</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td></td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>Not subject to reporting requirements of the United States SARA Section 313</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CERCLA RQ</td>
<td>1000 lb</td>
<td></td>
</tr>
<tr>
<td>(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)</td>
<td></td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations
No additional information available

SECTION 16: Other information

Revision date: 05/11/2017

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H290</td>
<td>May be corrosive to metals</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
</tbody>
</table>

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.
Copper Solution (BCA Reagent B)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 07/29/2015    Revision date: 05/11/2017    Version: 7.1

SECTION 1: Identification

1.1. Identification
Product form : Mixture
Product name : Copper Solution (BCA Reagent B)
Product code : 274C

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
Hazardous to the aquatic environment - Acute       H401       Toxic to aquatic life
Hazard Category 2
Hazardous to the aquatic environment - Chronic       H411       Toxic to aquatic life with long lasting effects
Hazard Category 2
Full text of H statements : see section 16

2.2. 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

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
Copper Solution (BCA Reagent B)
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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 | 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

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

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.
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

<table>
<thead>
<tr>
<th>Copper Solution (BCA Reagent B)</th>
<th>DNEL</th>
<th>DNEL</th>
<th>&lt;=</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper(II) sulfate, pentahydrate (7758-99-8)</td>
<td>Not applicable</td>
<td></td>
<td></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>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<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>No data available</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</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>300 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 482 mg/kg bodyweight; Rat)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2000 mg/kg (Rabbit; Literature study; OECD 402: Acute Dermal Toxicity)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>300 mg/kg body weight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

### SECTION 12: Ecological information

#### 12.1. Toxicity

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

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

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold limit algae 2</td>
<td>0.368 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Read-across)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable. No (test)data on mobility of the substance available.</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

<table>
<thead>
<tr>
<th>copper(II) sulfate, pentahydrate (7758-99-8)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

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

12.4. Mobility in soil

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

<table>
<thead>
<tr>
<th>Transport document description</th>
<th>UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No.(DOT)</td>
<td>UN3082</td>
</tr>
<tr>
<td>Proper Shipping Name (DOT)</td>
<td>Environmentally hazardous substances, liquid, n.o.s.</td>
</tr>
<tr>
<td>Class (DOT)</td>
<td>9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140</td>
</tr>
<tr>
<td>Packing group (DOT)</td>
<td>III - Minor Danger</td>
</tr>
<tr>
<td>Hazard labels (DOT)</td>
<td>9 - Class 9 (Miscellaneous dangerous materials)</td>
</tr>
</tbody>
</table>

Dangerous for the environment: Yes
Marine pollutant: Yes

<table>
<thead>
<tr>
<th>DOT Packaging Non Bulk (49 CFR 173.xxx)</th>
<th>203</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Packaging Bulk (49 CFR 173.xxx)</td>
<td>241</td>
</tr>
<tr>
<td>DOT Symbols</td>
<td>G - Identifies PSN requiring a technical name</td>
</tr>
</tbody>
</table>
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
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available
Copper Solution (BCA Reagent B)
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15.3. US State regulations
No additional information available

SECTION 16: Other information
Revision date: 05/11/2017

Full text of H-phrases:

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

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.
**Non Animal Protein 2mg/ml**

Safety Data Sheet

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

Date of issue: 04/02/2014
Revision date: 05/11/2017
Version: 7.1

**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 labeling
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>
<tbody>
<tr>
<td>2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride</td>
<td>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)ammonimethane, hydrochloride / tromethamine, hydrochloride / tromethane, hydrochloride</td>
<td>(CAS-No.) 1185-53-1</td>
<td>&lt; 2</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335</td>
</tr>
<tr>
<td>kathon CG</td>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H - isothiazol-3-one [EC no. 220-239-6] [3:1] / 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]</td>
<td>(CAS-No.) 55965-84-9</td>
<td>&lt; 0.04</td>
<td>Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410</td>
</tr>
</tbody>
</table>
Non Animal Protein 2mg/ml
Safety Data Sheet

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: Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention. 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)

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

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

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.

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 : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. 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 : -20 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| kathon CG (55965-84-9)          | Not applicable |
| sodium hydroxide (1310-73-2)   | Not applicable |
| 2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1) | Not applicable |

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 |
Non Animal Protein 2mg/ml
Safety Data Sheet

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 : Not classified

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

<table>
<thead>
<tr>
<th>Test Type</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 (oral)</td>
<td>100 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>300 mg/kg body weight</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
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after skin contact : May cause an allergic skin reaction.
**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.

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>45.4 mg/l (Other, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>40.4 mg/l (Other, 48 h, Ceriodaphnia sp., Experimental value)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

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

- **Persistence and degradability**: Contains non readily biodegradable component(s).

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

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

**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).

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

- **Bioaccumulative potential**: No bioaccumulation data available.

**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.

**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

- **Waste treatment methods**: Waste treatment 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
Non Animal Protein 2mg/ml
Safety Data Sheet

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>Note</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></td>
<td>Not subject to reporting requirements of the United States SARA Section 313</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>

15.2. International regulations

<table>
<thead>
<tr>
<th>Country</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANADA</td>
<td>No additional information available</td>
</tr>
<tr>
<td>EU-Regulations</td>
<td>No additional information available</td>
</tr>
<tr>
<td>National regulations</td>
<td>No additional information available</td>
</tr>
</tbody>
</table>

15.3. US State regulations

No additional information available

SECTION 16: Other information

Revision date : 05/11/2017

Full text of H-phrases:

- **H290**: May be corrosive to metals
- **H301**: Toxic if swallowed
- **H311**: Toxic in contact with skin
- **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.