



G-Biosciences, St Louis, MO, USA ♦ 1-800-628-7730 ♦ 1-314-991-6034 ♦ [technical@GBiosciences.com](mailto:technical@GBiosciences.com)

A Geno Technology, Inc. (USA) brand name

## Safety Data Sheet

### Bicinchoninic Acid (BCA) Protein Assay

#### Cat.# 786-570

Part #	Description
030B	BCA Solution (BCA Reagent A)
224B-B	BSA (2mg/mL) Solution
274C	Copper Solution (BCA Reagent B)

#### Cat.# 786-571

Part #	Description
030B	BCA Solution (BCA Reagent A)
224B-B	BSA (2mg/mL) Solution
274C	Copper Solution (BCA Reagent B)

Last saved: 7/30/2015 TN



think proteins! think G-Biosciences!

[www.GBiosciences.com](http://www.GBiosciences.com)



# BCA Solution

## 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: 08/06/2015

Version: 2.1

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Identification

Product form : Mixtures  
Product name. : BCA Solution  
Product code : 030B, 030B-B, 030B-C, 030B-D, 786-844, 786-845, 786-846, 786-847

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

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](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://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

##### Classification (GHS-US)

Skin Corr. 1B H314 - Causes severe skin burns and eye damage

Full text of H-phrases: see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger  
Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage  
Precautionary statements (GHS-US) : P260 - Do not breathe mist, spray  
P264 - Wash hands, forearms and face thoroughly after handling  
P280 - Wear eye protection, protective clothing, protective gloves  
P301 + P330 + P331 - If swallowed: rinse mouth. Do NOT induce vomiting  
P303 + P361 + P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a doctor, a POISON CENTER  
P321 - Specific treatment (see ... on this label)  
P363 - Wash contaminated clothing before reuse  
P405 - Store locked up  
P501 - Dispose of contents/container to an approved waste disposal plant

#### 2.3. Other hazards

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

# BCA Solution

## Safety Data Sheet

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

Name	Product identifier	%	Classification (GHS-US)
sodium carbonate	(CAS No) 497-19-8	2 - 5	Eye Irrit. 2A, H319
(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt	(CAS No) 979-88-4	< 2	Eye Irrit. 2A, H319
sodium hydroxide	(CAS No) 1310-73-2	< 2	Skin Corr. 1A, H314

Full text of H-phrases: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Dispose of rinse water as waste water. Call a physician immediately.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
- First-aid measures after skin contact : Immediately call a poison center or doctor/physician. Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.
- First-aid measures after eye contact : Immediately call a poison center or doctor/physician. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
- First-aid measures after ingestion : Do NOT induce vomiting. Immediately call a poison center or doctor/physician. Rinse mouth. Do NOT induce vomiting. Call a physician immediately.

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

- Symptoms/injuries : Causes severe skin burns and eye damage.
- Symptoms/injuries after skin contact : Burns.
- Symptoms/injuries after eye contact : Serious damage to eyes.
- Symptoms/injuries after ingestion : Burns.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

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

#### 5.2. Special hazards arising from the substance or mixture

- Reactivity : Thermal decomposition generates : Corrosive vapors.

#### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. 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. Evacuate unnecessary personnel. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray.

##### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8 Exposure controls/personal protection " ".
- Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

# BCA Solution

## Safety Data Sheet

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

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

- Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
- Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 8 : Exposure-controls/personal protection".

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Wear personal protective equipment.
- Hygiene measures : Wash ... thoroughly after handling. 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

- Technical measures : Comply with applicable regulations.
- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Store locked up. Store in a well-ventilated place. Keep cool.
- Incompatible products : Strong bases. strong acids.
- Incompatible materials : Sources of ignition. Direct sunlight.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

sodium hydroxide (1310-73-2)		
ACGIH	ACGIH Ceiling (mg/m³)	2 mg/m³ (Sodium hydroxide; USA; Momentary value; TLV - Adopted Value)

### 8.2. Exposure controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear protective gloves.
- Eye protection : Chemical goggles or face shield. Safety glasses.
- Skin and body protection : Wear suitable protective clothing.
- Respiratory protection : Wear approved mask.
- Environmental exposure controls : Avoid release to the environment.
- Other information : When using, do not eat, drink or smoke.

## SECTION 9: Physical and chemical properties

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

- Physical state : Liquid
- Color : Mixture contains one or more component(s) which have the following colour(s): Colourless to white White Colorless. White-yellow
- Odor : There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure.  
Mixture contains one or more component(s) which have the following odour(s): Odourless Almost odourless Mild odour
- 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

# BCA Solution

## Safety Data Sheet

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

Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Water: Solubility in water of component(s) of the mixture : • : 22 g/100ml • disodium tartrate, dihydrate: > 29 g/100ml • sodium hydroxide: 42 g/100ml • (2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt: 1.0 g/100ml
Log Pow	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Thermal decomposition generates : Corrosive vapors.

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

strong acids. Strong bases.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapors.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

sodium carbonate (497-19-8)	
LD50 oral rat	2800 mg/kg (Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Experimental value)

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified

# BCA Solution

## Safety Data Sheet

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

Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after skin contact	: Burns.
Symptoms/injuries after eye contact	: Serious damage to eyes.
Symptoms/injuries after ingestion	: Burns.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

sodium hydroxide (1310-73-2)	
LC50 fish 1	45.4 mg/l (LC50; Other; 96 h; Salmo gairdneri; Static system; Fresh water; Experimental value)

sodium carbonate (497-19-8)	
LC50 fish 1	300 mg/l (LC50; Other; 96 h; Lepomis macrochirus; Static system; Fresh water; Experimental value)
Threshold limit algae 1	242 mg/l (EC50; 5 days; Algae)

#### 12.2. Persistence and degradability

BCA Solution	
Persistence and degradability	Not established.

sodium hydroxide (1310-73-2)	
Persistence and degradability	Biodegradability: not applicable. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)	
Persistence and degradability	Biodegradability in water: no data available.

sodium carbonate (497-19-8)	
Persistence and degradability	Biodegradability: not applicable. Low potential for adsorption in soil.
ThOD	Not applicable (inorganic)

#### 12.3. Bioaccumulative potential

BCA Solution	
Bioaccumulative potential	Not established.

sodium hydroxide (1310-73-2)	
Bioaccumulative potential	No bioaccumulation data available.

(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt (979-88-4)	
Bioaccumulative potential	No bioaccumulation data available.

sodium carbonate (497-19-8)	
Log Pow	-6.19 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

Effect on the global warming	: No known ecological damage caused by this product.
Other information	: Avoid release to the environment.

# BCA Solution

## Safety Data Sheet

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

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

- Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to Dispose in a safe manner in accordance with local/national regulations.
- Ecology - waste materials : Avoid release to the environment.

### 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
- DOT Proper Shipping Name : Environmentally hazardous substances, liquid, n.o.s.
- Department of Transportation (DOT) Hazard Classes : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
- Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



- Packing group (DOT) : III - Minor Danger
- 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.

# BCA Solution

## Safety Data Sheet

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

### TDG

No additional information available

### Transport by sea

No additional information available

### Air transport

No additional information available

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory except for:

sodium hydroxide	CAS No 1310-73-2	< 2%
(2,2'-biquinoline)-4,4'-dicarboxylic acid, disodium salt	CAS No 979-88-4	< 2%
sodium carbonate	CAS No 497-19-8	2 - 5%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

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

Not listed on SARA Section 313 (Specific toxic chemical listings)

RQ (Reportable quantity, section 304 of EPA's List of Lists) :	1000 lb
--	---------

### 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

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

## SECTION 16: Other information

Indication of changes	: Revision - See : *.
Revision date	: 08/06/2015
Other information	: None.

Full text of H-phrases::

Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Skin Corr. 1A	skin corrosion/irritation Category 1A
Skin Corr. 1B	skin corrosion/irritation Category 1B
H314	Causes severe skin burns and eye damage
H319	Causes serious eye irritation

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: 08/06/2015

Version: 2.1

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Identification

Product form : Mixtures  
Product name. : Copper Solution (BCA Reagent B)  
Product code : 274C, 274C-B, 786-848

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

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](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://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

##### Classification (GHS-US)

Aquatic Chronic 2 H411 - Toxic to aquatic life with long lasting effects

Full text of H-phrases: see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS09

Hazard statements (GHS-US) : 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 ...

#### 2.3. Other hazards

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

Name	Product identifier	%	Classification (GHS-US)
copper(II) sulfate, pentahydrate	(CAS No) 7758-99-8	2 - 5	Acute Tox. 3 (Oral), H301

Full text of H-phrases: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Assure fresh air breathing. Allow the victim to rest.

# Copper Solution (BCA Reagent B)

## Safety Data Sheet

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

First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center or a doctor if you feel unwell.

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

Symptoms/injuries	: Not expected to present a significant hazard under anticipated conditions of normal use.
-------------------	--

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

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

### 5.2. Special hazards arising from the substance or mixture

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

### 5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. 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. Evacuate unnecessary personnel.
----------------------	--

#### 6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8 Exposure controls/personal protection".
Emergency procedures	: Ventilate area.

### 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 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. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
Other information	: Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 8 : Exposure-controls/personal protection".

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Store in a well-ventilated place. Keep cool.
Incompatible products	: Strong bases. strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.

# Copper Solution (BCA Reagent B)

## Safety Data Sheet

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

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Copper Solution (BCA Reagent B)

DNEL	DNEL	<=
------	------	----

#### 8.2. Exposure controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses. Safety glasses.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: Wear approved mask.
Environmental exposure controls	: Avoid release to the environment.
Other information	: When using, do not eat, drink or smoke.

### SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Color	: Mixture contains one or more component(s) which have the following colour(s): Blue
Odor	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour(s): Odourless
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)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Water: Solubility in water of component(s) of the mixture : • copper(II) sulfate, pentahydrate: 23 g/100ml
Log Pow	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 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.

# Copper Solution (BCA Reagent B)

## Safety Data Sheet

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

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

strong acids. Strong bases.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

copper(II) sulfate, pentahydrate (7758-99-8)	
LD50 oral rat	300 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 482 mg/kg bodyweight; Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Literature study; OECD 402: Acute Dermal Toxicity)
ATE US (oral)	300.000 mg/kg body weight

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
	Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
	Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

### 12.1. Toxicity

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

copper(II) sulfate, pentahydrate (7758-99-8)	
Threshold limit algae 2	0.368 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Read-across)

### 12.2. Persistence and degradability

Copper Solution (BCA Reagent B)	
Persistence and degradability	May cause long-term adverse effects in the environment.
copper(II) sulfate, pentahydrate (7758-99-8)	
Persistence and degradability	Biodegradability: not applicable. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	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

### 12.3. Bioaccumulative potential

#### Copper Solution (BCA Reagent B)

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

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

Bioaccumulative potential	Bioaccumable.
---------------------------	---------------

### 12.4. Mobility in soil

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

Ecology - soil	Toxic to flora.
----------------	-----------------

### 12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to ...

Ecology - waste materials : Avoid release to the environment.

## 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

DOT Proper Shipping Name : Environmentally hazardous substances, liquid, n.o.s.

Department of Transportation (DOT) Hazard Classes : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



Packing group (DOT) : III - Minor Danger

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

# Copper Solution (BCA Reagent B)

## Safety Data Sheet

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

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.

### TDG

No additional information available

### Transport by sea

No additional information available

### Air transport

No additional information available

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### 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

### 15.3. US State regulations

No additional information available

# Copper Solution (BCA Reagent B)

## Safety Data Sheet

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

### SECTION 16: Other information

Indication of changes : Revision - See : \*.  
Revision date : 08/06/2015  
Other information : None.

Full text of H-phrases::

Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
H301	Toxic if swallowed
H411	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*



# BSA Solution

## 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: 08/06/2015

Version: 2.1

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Identification

Product form : Mixtures  
Product name. : BSA Solution  
Product code : 786-006, 786-114, 786-920, 224B-B, 224B-C, 224B-O, 236B, 238B, 240B, 242B, 244B, 246B, 445A-A

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

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](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://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

##### Classification (GHS-US)

Not classified

#### 2.2. Label elements

##### GHS-US labeling

No labeling applicable

#### 2.3. Other hazards

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

Name	Product identifier	%	Classification (GHS-US)
sodium azide	(CAS No) 26628-22-8	< 2	Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-phrases: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

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

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Assure fresh air breathing. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist. Rinse eyes with water as a precaution.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a poison center or doctor/physician. Specific treatment (see ... on this label). Call a poison center or a doctor if you feel unwell.



# BSA Solution

## Safety Data Sheet

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

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

Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

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

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. 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. Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

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

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

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

Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

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

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 8 : Exposure-controls/personal protection".

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

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

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

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Store in a well-ventilated place. Keep cool.

Incompatible products : Strong bases. strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### sodium azide (26628-22-8)

ACGIH

ACGIH Ceiling (mg/m<sup>3</sup>)

0.29 mg/m<sup>3</sup> (Sodium azide, as sodium azide; USA; Momentary value; TLV - Adopted Value)

# BSA Solution

## Safety Data Sheet

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

sodium azide (26628-22-8)		
ACGIH	ACGIH Ceiling (ppm)	0.11 ppm (Sodium azide, as hydrazoic acid vapor; USA; Momentary value; TLV - Adopted Value)

### 8.2. Exposure controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses. Safety glasses.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: Wear approved mask.
Environmental exposure controls	: Avoid release to the environment.
Other information	: When using, do not eat, drink or smoke.

## SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Color	: Colorless.
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Water: Solubility in water of component(s) of the mixture : • sodium azide: 42 g/100ml (17 °C) • : poorly soluble • sodium chloride: 31.7 g/100ml (20 °C)
Log Pow	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 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

Not established.

### 10.3. Possibility of hazardous reactions

Not established.

# BSA Solution

## Safety Data Sheet

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

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

strong acids. Strong bases.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

sodium azide (26628-22-8)	
ATE US (oral)	5.000 mg/kg body weight
ATE US (dermal)	5.000 mg/kg body weight

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Toxic if swallowed.

Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Ecology - water : Harmful to aquatic life with long lasting effects.

sodium azide (26628-22-8)	
LC50 fish 1	0.8 mg/l (LC50; 96 h)
EC50 Daphnia 1	4.2 mg/l (EC50; 48 h)

### 12.2. Persistence and degradability

BSA Solution	
Persistence and degradability	May cause long-term adverse effects in the environment.
sodium azide (26628-22-8)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

### 12.3. Bioaccumulative potential

BSA Solution	
Bioaccumulative potential	Not established.

# BSA Solution

## Safety Data Sheet

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

### sodium azide (26628-22-8)

Bioaccumulative potential	Not bioaccumulative.
---------------------------	----------------------

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to ...

Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

No dangerous good in sense of transport regulations

#### TDG

No additional information available

#### Transport by sea

No additional information available

#### Air transport

No additional information available

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### sodium azide (26628-22-8)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on SARA Section 313 (Specific toxic chemical listings)

RQ (Reportable quantity, section 304 of EPA's List of Lists) :	1000 lb
--	---------

SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
--	--------

#### 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 : 08/06/2015

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

# BSA Solution

## Safety Data Sheet

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

Other information : None.

Full text of H-phrases::

Acute Tox. 1 (Dermal)	Acute toxicity (dermal) Category 1
Acute Tox. 2 (Oral)	Acute toxicity (oral) Category 2
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
H300	Fatal if swallowed
H310	Fatal in contact with skin
H400	Very toxic 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*