



**Safety Data Sheet (SDS)** According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

**Issuing Date:** 2018-05-09

**Revision Date:** 2024-12-18

**Version:** 3

**SECTION 1. Identification**

**Product identifier**

**Product No** 7780  
**Product name** BCA Protein Assay Kit  
**Kit Component** 11621: BCA Protein Assay Reagent A  
11622: BCA Protein Assay Reagent B  
11623: BCA Protein Assay Albumin Standard  
11785: Compatibility Reagent  
11791: Reconstitution Buffer

**Hazardous Components**

**11622: BCA Protein Assay Reagent B**  
**11785: Compatibility Reagent**  
**UN number** UN3316

**Recommended use of the chemical and restrictions on use**

**Identified uses** This product is intended for research purposes only.  
**Manufacturer, importer, supplier**

**Manufacturer address** Cell Signaling Technology, Inc.  
3 Trask Lane  
Danvers, MA 01923  
United States  
TEL: +1 978 867 2300  
FAX: +1 978 867 2400  
**Website** www.cellsignal.com  
**Email address** support@cellsignal.com  
**Emergency telephone number** In case of emergency call CHEMTREC 1-800-424-9300

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

**Classification**

Classification and label elements described below are inclusive of all hazards of the combined kit. The most severe classifications are listed for each endpoint. Refer to individual kit component SDS for classification and label elements for each component present in the kit.

<b>Acute oral toxicity</b>	Category 3
<b>Respiratory sensitization</b>	Category 1
<b>Skin sensitization</b>	Category 1
<b>Acute Aquatic Toxicity</b>	Category 1
<b>Chronic Aquatic Toxicity</b>	Category 1

**GHS Label elements, including precautionary statements****Signal Word**

Danger

**Hazard statement(s)**

Toxic if swallowed.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Very toxic to aquatic life with long lasting effects.

**Precautionary Statement(s)**

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

Wash face, hands and any exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Avoid release to the environment.

In case of inadequate ventilation wear respiratory protection.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Rinse mouth

IF ON SKIN: Wash with plenty of soap and water

Take off contaminated clothing and wash before reuse

If skin irritation occurs: Get medical advice/attention

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Store locked up.

Dispose of contents/container to an approved waste disposal plant.

**Supplementary Hazard Information**

No information available.

**Hazards not otherwise classified (HNOC)**

Not applicable.

**SECTION 3. Composition/information on ingredients****Kit Component 11621: BCA Protein Assay Reagent A**

Chemical name	CAS No	Weight-%
4,4'-Dicarboxy-2,2'-biquinoline disodium salt	979-88-4	1-5
Sodium carbonate	497-19-8	1-5

**Kit Component 11622: BCA Protein Assay Reagent B**

WARNING: Toxic to aquatic life with long lasting effects.

Chemical name	CAS No	Weight-%
copper (II) sulfate, pentahydrate (1:1:5)	7758-99-8	3-5

**Kit Component 11785: Compatibility Reagent**

DANGER: Toxic if swallowed. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Chemical name	CAS No	Weight-%
Alkylating Compatibility Reagent	NOT LISTED	98-100

**Kit Component 11623: BCA Protein Assay Albumin Standard  
11791: Reconstitution Buffer**

These products do not contain substances at concentrations requiring disclosure under 29 CFR 1910.1200 (OSHA Hazard Communication Standard).

**SECTION 4. First-aid measures**

<b>Eye contact</b>	Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
<b>Inhalation</b>	Move to fresh air. If breathing is irregular or stopped, administer artificial respiration.
<b>Ingestion</b>	Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

**Most important symptoms and effects, both acute and delayed**

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**Advice for emergency responders**

<b>General advice</b>	For further assistance, contact your local Poison Control Center.
<b>Protection of first-aiders</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves

**SECTION 5. Fire-fighting measures****Extinguishing media**

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment
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**Specific hazards arising from the chemical**

Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides. Nitrogen oxides (NOx). Halogenated compounds.

**Explosion Data**

<b>Sensitivity to Mechanical Impact</b>	None
<b>Sensitivity to Static Discharge</b>	None

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

- For non-emergency personnel** Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Avoid dust formation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation.
- Other information** No information available.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

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

- Methods for containment** Prevent further leakage or spillage if safe to do so.
- Methods for cleaning up** Contain spill. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly.

**SECTION 7. Handling and storage****Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use.

**Conditions for safe storage, including any incompatibilities**

- Technical measures/Storage conditions** Keep containers tightly closed in a dry, cool and well-ventilated place.
- Packaging material** No information available
- Incompatible products** None known based on information supplied

**SECTION 8. Exposure controls/personal protection****Control parameters**

Chemical name	Occupational exposure limit values		
	ACGIH TLV	OSHA PEL	NIOSH REL
copper (II) sulfate, pentahydrate (1:1:5)	TWA: 1 mg/m <sup>3</sup> Cu dust and mist	-	IDLH dust and mist: 100 mg/m <sup>3</sup> TWA dust and mist: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

Showers, eyewash stations, and ventilation systems.

**Individual protection measures, such as personal protective equipment**

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

<b>Eye/face protection</b>	Safety glasses with side-shields.
<b>Skin and body protection</b>	Wear protective gloves/clothing.
<b>Respiratory protection</b>	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.
<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

## SECTION 9. Physical and chemical properties

Information on the known physical chemical properties of each component within Kit are given below. If not included, information is either not available or not applicable. Refer to individual kit component SDS for further information.

**Information on basic physical and chemical properties**

<b>Kit Component</b>	<b>11621: BCA Protein Assay Reagent A</b>
Physical state	Liquid
Appearance	Clear
Color	Light yellow
pH	11.25
Specific Gravity/Relative Density	1.03
<b>Kit Component</b>	<b>11622: BCA Protein Assay Reagent B</b>
Physical state	Liquid
Appearance	Clear
Color	Blue
<b>Kit Component</b>	<b>11623: BCA Protein Assay Albumin Standard</b>
Physical state	Liquid
Appearance	Clear
Color	Colorless
pH	8.0
<b>Kit Component</b>	<b>11785: Compatibility Reagent</b>
Physical state	Solid
Appearance	Powder
<b>Kit Component</b>	<b>11791: Reconstitution Buffer</b>
Physical state	Liquid
Appearance	Clear
Color	Colorless
Odor	Odorless
Solubility	Soluble in water

## SECTION 10. Stability and reactivity

**Reactivity**

No information available.

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

<b>Hazardous reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	None under normal processing.

**Conditions to Avoid**

No information available

**Incompatible Materials**

None known based on information supplied

**Hazardous Decomposition Products**

Thermal decomposition can lead to release of irritating gases and vapors

**SECTION 11. Toxicological information****Information on likely routes of exposure****Product Information**

This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

**Inhalation**

<b>Kit Component</b> Inhalation	<b>11622: BCA Protein Assay Reagent B</b> Avoid breathing vapors or mists
<b>Kit Component</b> Inhalation	<b>11785: Compatibility Reagent</b> May cause irritation of respiratory tract

**Eye contact**

<b>Kit Component</b> Eye contact	<b>11622: BCA Protein Assay Reagent B</b> May cause slight irritation
<b>Kit Component</b> Eye contact	<b>11621: BCA Protein Assay Reagent A</b> May cause redness, itching, and pain

**Skin contact**

<b>Kit Component</b> Skin contact	<b>11622: BCA Protein Assay Reagent B</b> Prolonged contact may cause redness and irritation
<b>Kit Component</b> Skin contact	<b>11785: Compatibility Reagent</b> May cause sensitization by skin contact

**Ingestion**

<b>Kit Component</b> Ingestion	<b>11622: BCA Protein Assay Reagent B</b> Toxic if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
<b>Kit Component</b> Ingestion	<b>11785: Compatibility Reagent</b> Toxic if swallowed.

**Information on toxicological effects****Component Information**

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Alkylating Compatibility Reagent	(Mouse) 74 mg/kg	-	-
copper (II) sulfate, pentahydrate (1:1:5)	300 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	-
Sodium carbonate	= 4090 mg/kg (Rat)	> 2000 mg/kg ( Rabbit )	= 2300 mg/m <sup>3</sup> ( Rat ) 2 h

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Symptoms</b>	Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.
<b>Skin and Eye Corrosion/Irritation</b>	No information available
<b>Sensitization</b>	
<b>Kit Component</b> Respiratory Sensitization Skin Sensitization	<b>11785: Compatibility Reagent</b> May cause allergy or asthma symptoms or breathing difficulties if inhaled May cause skin sensitization
<b>Kit Component</b> Skin Sensitization	<b>11622: BCA Protein Assay Reagent B</b> May cause skin sensitization
<b>Mutagenic effects</b>	No information available
<b>Kit Component</b> Mutagenic effects	<b>11622: BCA Protein Assay Reagent B</b> Suspected of causing genetic defects
<b>Carcinogenicity</b>	No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible or confirmed carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Reproductive toxicity</b>	No information available.
<b>Kit Component</b> Reproductive toxicity	<b>11622: BCA Protein Assay Reagent B</b> Product is or contains a chemical which is a known or suspected reproductive hazard.
<b>Systemic Target Organ Toxicity (STOT)</b>	No information available
<b>Aspiration Hazard</b>	No information available.

**SECTION 12. Ecological information****Ecotoxicity**

**Product Information****Kit Component**  
Ecotoxicity**11622: BCA Protein Assay Reagent B**  
Very toxic to aquatic life with long lasting effects**Component Information**

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
copper (II) sulfate, pentahydrate (1:1:5)	-	LC50 0.1 mg/L (Oncorhynchus mykiss) 96 h LC50 0.66 - 1.15 mg/L (Lepomis macrochirus) 96 h LC50 0.96 - 1.8 mg/L (Lepomis macrochirus) 96 h LC50 0.1478 - 0.165 mg/L (Oncorhynchus mykiss) 96 h LC50 0.09 - 0.19 mg/L (Oncorhynchus mykiss) 96 h LC50 0.6752 mg/L (Pimephales promelas) 96 h	EC50 0.0058 - 0.0073 mg/L (Daphnia magna) 48 h EC50 0.147 - 0.227 mg/L (Daphnia magna) 48 h
Sodium carbonate	-	LC50 300 mg/L (Lepomis macrochirus) 96 h LC50 310 - 1220 mg/L (Pimephales promelas) 96 h	EC50 265 mg/L (Daphnia magna) 48 h

**Persistence and degradability****Kit Component**  
Persistence and degradability**11622: BCA Protein Assay Reagent B**  
Not readily biodegradable  
Heavy metals are expected to persist in the environment**Kit Component**  
Persistence and degradability**11623: BCA Protein Assay Albumin Standard**  
Product is biodegradable**Bioaccumulation****Kit Component**  
Bioaccumulation  
Bioconcentration factor (BCF)**11622: BCA Protein Assay Reagent B**  
Material will likely bioaccumulate in exposed species  
>100 (copper)**Kit Component**  
Bioaccumulation**11623: BCA Protein Assay Albumin Standard**  
Does not bioaccumulate**Mobility****Kit Component**  
Mobility**11622: BCA Protein Assay Reagent B**  
Is predicted to have low mobility in the environment**Other adverse effects**

No information available.

**SECTION 13. Disposal considerations**



**Waste Disposal Methods**

Dispose of in accordance with all applicable national environmental laws and regulations.

**Disposal considerations**

Do not empty into drains; dispose of this material and its container in a safe way. Dispose of wastes in an approved waste disposal facility.

<b>SECTION 14. Transport information</b>
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This material is subject to regulation as a hazardous material for shipping:

**DOT**

<b>UN number</b>	UN3316
<b>UN proper shipping name</b>	Chemical Kit
<b>Transport hazard class(es)</b>	9
<b>Packing group</b>	III

**IATA**

<b>UN number</b>	UN3316
<b>UN proper shipping name</b>	Chemical Kit
<b>Transport hazard class(es)</b>	9
<b>Packing group</b>	III

<b>SECTION 15. Regulatory information</b>
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**North American Inventory Listing**

Chemical name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
Sodium carbonate	Listed	Not Listed	Listed	Not Listed
4,4'-Dicarboxy-2,2'-biquinoline disodium salt	Listed	Not Listed	Listed	Not Listed

**SARA 313**

Refer to kit component SDS for full SARA Section 313 reporting requirements.

Chemical name	CAS No	SARA 313 - Threshold Values %
copper (II) sulfate, pentahydrate (1:1:5)	7758-99-8	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**Clean Water Act**

Refer to kit component SDS for full Clean Water Act (CWA) reporting requirements.

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances	CWA - Bioaccumulative Chemicals of Concern (BCCs)

copper (II) sulfate, pentahydrate (1:1:5)	10 lb	Listed	Not Listed	Listed	Not Listed
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**CERCLA**

Refer to kit component SDS for full Comprehensive Environmental Response Compensation and Liability Act (CERCLA) reporting requirements.

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
copper (II) sulfate, pentahydrate (1:1:5)	10 lb	Not Listed

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Refer to kit component SDS for applicable State Right-To-Know (RTK) information.

Chemical name	New Jersey	Massachusetts	Pennsylvania
copper (II) sulfate, pentahydrate (1:1:5)	Listed	Listed	Listed

<b>SECTION 16. Other information</b>
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**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet