

SAFETY DATA SHEET

Cat# BN01031m-2500, 5000, BCA Protein Assay Kit

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BCA Protein Assay Kit

PRODUCT CODES: Cat# BN01031 -2500, -5000

MANUFACTURER: Assay Genie (brand of Reagent Genie Ltd.)

ADDRESS: G1 The Steelworks, Foley Street, Dublin 1

EMERGENCY PHONE: +353 1 8879802

SECTION 2: HAZARDS IDENTIFICATION

| Component | Description | Volume | Safety Information |
|------------------------|---|---|--------------------|
| BCA Reagent A | Proprietary reagent | BN01031-2500: 190 ml BN01031-5000: 380 ml | No hazards |
| BCA Reagent B | Proprietary reagent (contains Bicinchoninic acid, disodium) | BN01031-2500: 190 ml BN01031-5000: 380 ml | See below |
| BCA Reagent C | Proprietary reagent (contains Copper sulfate) | BN01031-2500: 9 ml BN01031-5000: 18 ml | See below |
| BCA Standard (2 mg/ml) | Solution | BN01031-2500: 5 x 1 ml BN01031-5000: 10 x 1 ml | No hazards |

Bicinchoninic acid, disodium:

Emergency Overview

OSHA Hazards: Respiratory sensitizer, Irritant

GHS Classification: Skin irritation (Category 2)
Eye irritation (Category 2A)
Respiratory sensitization (Category 1)

GHS Label elements, including precautionary statements

Pictogram:



Signal word: Warning

Hazard statement(s): H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statement(s): P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

HMIS Classification

Health hazard: 2

Chronic health hazard: *

Flammability: 0

Physical hazards: 0

NFPA Rating

Health hazard: 2

Fire: 0

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Copper sulfate:

Emergency Overview

OSHA Hazards: Target organ effect, Toxic by ingestion, Irritant

Target Organs: Liver, Kidney, Blood

GHS Classification: Acute toxicity, Oral (Category 3)

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Acute toxicity, Dermal (Category 5)

Skin irritation (Category 2)

Eye irritation (Category 2A)

Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram:



Signal word: Warning

Hazard statement(s): H302 Harmful if swallowed

Precautionary statement(s): P264 Wash skin thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P330 Rinse mouth.

HMIS Classification

Health hazard: 2

Chronic health hazard: *

Flammability: 0

Physical hazards: 0

NFPA Rating

Health Hazard: 2

Fire: 0

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: Toxic if swallowed.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS Number | EC-No. | Molecular Weight | Chemical Formula |
|------------------------------|------------|-----------|------------------|--------------------------|
| Bicinchoninic acid, disodium | 979-88-4 | -- | 388.28 | $C_{20}H_{10}N_2Na_2O_4$ |
| Copper sulfate | 7758-99-8 | 231-847-6 | 249.69 | $CuSO_4$ |

SECTION 4: FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5: FIRE-FIGHTING MEASURES

Condition of flammability: Not flammable or combustible.

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions— see section 10.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Flash back possible over considerable distance. Container explosion may occur under fire conditions. Use explosion-proof equipment. Keep away from sources of ignition – no smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: room temperature (~23 °C).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Copper sulfate:

| Components | CAS-No. | Value | Control parameters | Basis |
|----------------|-----------|-------|---------------------|--|
| Copper sulfate | 7758-99-8 | TWA | 1 mg/m ³ | USA. NIOSH Recommended Exposure Limits |

Bicinchoninic acid disodium:

Contain no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| Property | Bicinchoninic acid, disodium | Copper sulfate |
|----------------------------|------------------------------|-------------------------|
| Appearance: | Powder | Blue crystalline |
| pH: | No data available | 3.7-4.5 at 50 g/l |
| Water Solubility: | No data available | No data available |
| Other Solubility: | No data available | No data available |
| Boiling Point (°C): | No data available | No data available |
| Melting Point (°C): | No data available | 110 °C (230 °F) |
| Flash Point (°C): | No data available | No data available |
| Ignition Temperature (°C): | No data available | No data available |
| Density: | No data available | 2.284 g/cm ³ |

SECTION 10: STABILITY AND REACTIVITY

| Property | Bicinchoninic acid, disodium | Copper sulfate |
|-----------------------------------|---|---|
| Chemical stability: | Stable under recommended storage conditions | |
| Conditions to avoid: | No data available | Exposure to moisture |
| Materials to avoid: | Strong oxidizing agents | Powdered metals, anhydrous copper(II) sulfate, reacts violently with hydroxylamine, magnesium |
| Hazardous decomposition products: | Carbon oxides, nitrogen oxides, sodium oxides | Sulfur oxides, copper oxides |

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SECTION 11: TOXICOLOGICAL INFORMATION

Bicinchoninic acid, disodium:

Acute toxicity: no data available

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity – single exposure (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information: RTECS: not available

Copper sulfate:

Acute toxicity: LD50 Oral – rat – 300 mg/kg □ Remarks: anhydrous

LC50 Dermal – rat – >2,000 mg/kg □ Remarks: anhydrous

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Germ cell mutagenicity: no data available

Carcinogenicity:

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity – single exposure (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: Toxic if swallowed.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information: RTECS: GL8900000

SECTION 12: ECOLOGICAL INFORMATION

Copper sulfate:

Persistence and degradability: no data available

Toxicity: Toxicity to daphnia and other aquatic invertebrates: EC50 – Daphnia magna (Water flea) – 0.024 mg/l – 48 h

Bioaccumulative potential: no data available

Mobility in soil: no data available

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PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Observe all federal, state, and local environmental regulations.

Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

Copper sulfate:

DOT (US): UN-number: 3077, Class: 9, Packing group: III; Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Copper sulfate); Reportable Quantity (RQ): 10 lbs.; Marine pollutant: Yes; Poison inhalation hazard: No

IMDG: UN-number: 3077, Class: 9, Packing group: III; EMS-No: F-A, S-F; Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (Copper sulfate); Marine pollutant: Yes

IATA: UN-number: 3077, Class: 9, Packing group: III; Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Copper sulfate)

Bicinchoninic acid disodium:

DOT (US): Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

SECTION 15: REGULATORY INFORMATION

SARA 302 Components: SARA 302: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: The following components are subject to reporting levels established by SARA Title III, Section 313:

Copper sulfate, CAS-No. 7758-99-8; Revision Date: 2007-03-01

SARA 311/312 Hazards: Bicinchoninic acid disodium: Acute Health Hazard

Copper sulfate: Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components: Copper sulfate, CAS-No. 7758-99-8; Revision Date: 2007-03-01

Pennsylvania Right To Know Components:

Bicinchoninic acid disodium, CAS-No. 979-88-4

Copper sulfate, CAS-No. 7758-99-8; Revision Date: 2007-03-01

New Jersey Right To Know Components:

Bicinchoninic acid disodium, CAS-No. 979-88-4

Copper sulfate, CAS-No. 7758-99-8; Revision Date: 2007-03-01

California Prop. 65 Components: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

EU regulations:

| Component | Risk Phrases | Safety Phrases |
|------------------------------|---------------------|----------------|
| Bicinchoninic acid, disodium | R36/38 | S26 |
| Copper sulfate | R22, R36/38, R50/53 | S22, S60, S61 |

SECTION 16: OTHER INFORMATION

DISCLAIMER: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Assay Genie shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.