

SAFETY DATA SHEET (SDS)

SDS DATE : Sep, 2021

Section 1. Product And Company Identification

1. Product identifier

- 1.1. Product Name : Protein Quantification Kit-BCA
- 1.2. Product Code : BCA0500

2. Details of the supplier of the safety data sheet

- 2.1. Company: BIOMAX, Inc.,
- 2.2. Address : Keumkang Penterium IX Tower CORE-C 7F, 46, Galmaesunhwan-ro 166beon-gil, Guri-si, Gyeonggi-do, Republic of Korea
- 2.3. Telephone: +82-2-3296-3158
- 2.4. Emergency Phone : +82-2-3296-3159
- 2.5. FAX: +82-2-973-2858

3. Product use

- 3.1. For research use only.

Section 2. Hazard identification

Component	Description	Volume	Safety Information
Solution A	Aqueous Solution	500mℓ	No hazardous
Solution B	Aqueous Solution	250mℓ	See below
BSA Standard	Aqueous Solution	10mℓ	No hazardous

Solution and BSA Standard contain no substances which at their given concentration, are considered to be hazardous to health.

1.1 Copper(II) sulfate pentahydrate:

Emergency Overview

GHS Classification

- Acute toxicity, Oral (Category 4)
- Skin irritation (Category 2)
- Eye irritation (Category 2A)
- Acute aquatic toxicity (Category 1)
- Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram:



Signal word: Danger

Hazard statement(s):

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s): none

- P263 Avoid release to the environment.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P501 Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard : none

Statements

Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 3. Composition/Information on ingredients

Component	CAS Number	EC-No.	Molecular Weight	Formula
Copper(II) sulfate pentahydrate	7758-99-8	231-847-6	249.68	CuSO ₄ 5H ₂ O

Section 4. First Aid Measures

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.

In case of eye contact: Flush eyes with water as a precaution.

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

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

Special hazards arising from the substance or mixture: Sulphur oxides, Copper oxides

Advice for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information: No data available

Section 6. Accidental Release Measures

Personal precautions:

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

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: Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling And Storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: RT

Section 8: Exposure Controls/Personal Protection

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face 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 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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de

Test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves.

This recommendation is advisory only and must be evaluated by an industrial situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

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.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (EN 143) respirator cartridges as a backup to engineering controls. If full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

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

Section 9: Physical And Chemical Properties

Property	Solution A	Solution B	BSA standard
Appearance:	Transparent	Blue color solution	Transparent
pH:	No data available	No data available	No data available
Water Solubility:	No data available	No data available	No data available
Other Solubility:	No data available	No data available	No data available
Boiling Point (°C):	No data available	No data available	No data available
Melting Point (°C):	No data available	No data available	No data available
Flash Point (°C):	No data available	No data available	No data available
Ignition Temperature (°C):	No data available	No data available	No data available
Density:	No data available	No data available	No data available

Because of Copper(II) sulfate pentahydrate, Solution B appears blue color.

Section 10: Stability And Reactivity

Property	Solution A	Solution B	BSA standard
Chemical Stability:	Stable under recommended storage conditions		
Conditions to Avoid:	No data available		
Materials to Avoid:	No dangerous reaction known under conditions of normal use.	Strong Oxidizing agents	No dangerous reaction known under conditions of normal use.
Hazardous decomposition: products:	No data available		

Section 11: Toxicological Information

Copper(II) sulfate pentahydrate (Solution B):

Acute toxicity

LD50 Oral - Rat - 482 mg/kg (Copper sulphate pentahydrate)

(OECD Test Guideline 401)

Remarks: anhydrous

LD50 Dermal - Rat - > 2,000 mg/kg (Copper sulphate pentahydrate)

Remarks: anhydrous

Skin corrosion/irritation

Irritating to skin. (Copper sulphate pentahydrate)

Serious eye damage/eye irritation

Irritating to eyes. (Copper sulphate pentahydrate)

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.

Respiratory or skin sensitization: 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.

Synergistic effects: no data available

Additional information: RTECS: GL8900000

Section 12: Ecological Information

Copper(II) sulfate pentahydrate (Solution B):**Persistence and degradability:** The methods for determining the biological degradability are not applicable to inorganic substances.**Toxicity:** EC50 - Daphnia magna (Water flea) - 0.024 mg/l - 48 h (Copper sulphate pentahydrate)**Bioaccumulative potential:** no data available**Mobility in soil:** no data available**PBT and vPvB assessment:** This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.**Other adverse effects:** Very toxic to aquatic life with long lasting effects.**Section 13: Disposal Considerations****Waste treatment methods:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.**Contaminated packaging:** Dispose of as unused product.**Section 14: Transport Information****IATA / ADR / DOT-US / IMDG**

Classified as dangerous in the meaning of transport regulations

UN number UN3082**UN proper shipping name** Environmentally Hazardous Substance, Liquid, n.o.s. (Copper(II) sulfate, pentahydrate (1:1:5))**Transport hazard class(es)** 9**Packing group** Not Applicable**Environmental hazards** yes**Special precautions for user** Not Applicable**Transport in bulk according to Annex II of MARPOL and the IBC Code** Not Applicable.**Section 15: Regulatory Information**

Chemical Name	Wastes Control Act	Safety Control of Dangerous Substances Act
Copper (II) sulfate pentahydrate	3 mg/L (Contained in sludge, adsorbent waste, absorbent waste)	Not Listed

1. Industrial Safety and Health Law**1.1 Harmful substances subject to control :** Refer to the Industrial Safety and Health Act, articles 24 and 38, and the Regulation on Industrial Health Standards, Annex 12 (related to articles 420, 439, 440)

Chemical Name	ISHA - Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA - Harmful Substances Requiring Permission	ISHA - Substances to be controlled - Metals	ISHA - Substances to be controlled - Organic Substances	ISHA - Substances to be controlled - Acids and bases	ISHA - Substances to be controlled - Gas-phase substances
Copper (II) sulfate pentahydrate	Not Applicable	Not Applicable	1 % cut-off value allowed in mixture	Not Applicable	Not Applicable	Not Applicable

1.2 Harmful agents subject to work environment monitoring: Refer to the Industrial Safety and Health Act, article 42, and the Enforcement Regulation of the Industrial Safety and Health Act, article 93-1

Chemical Name	Organic compounds	Metals	Acids and alkalis	Gas-phase substances	Dusts
Copper (II) sulfate pentahydrate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

1.3 Harmful agents subject to workers requiring health examination: Refer to the Industrial Safety and Health Act, article 43, and the Enforcement Regulation of the Industrial Safety and Health Act, article 98-2

Chemical Name	Organic compounds	Metals	Acids and alkalis	Gas-phase substances	Dusts
Copper (II) sulfate pentahydrate	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

2. Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**2.1 Chemicals Control Act**

Chemical Name	Toxic Substance	Prohibited substance	Restricted substance
Copper (II) sulfate pentahydrate	Not Applicable	Not Applicable	Not Applicable

2.2 Act on Registration, Evaluation, etc. of Chemicals (K-REACH)

Refer to the Act on Registration and Evaluation of Chemical Substances, Articles 8-4, 9 and 10-2

Chemical Name	Existing substances subject to registration	Existing substances not likely to be subject to registration	Existing substances known to be of very low risk
Copper (II) sulfate pentahydrate	Present (Registration deadline - 3 years from the official date of notice, [336])	Not Applicable	Not Applicable

2.3 Chemicals Control Act (CCA) – Accident Precaution Chemicals

Refer to the Chemicals Control Act (CCA), Articles 2-6 and 39, the Enforcement Decree of Chemicals Control Act, Article 17, and the Enforcement Regulation of Chemicals Control Act, Articles 45 and Annex 10

Chemical Name	Threshold Values (%)	Quantity limit for manufacture/use	Quantity limit for custody/storage
Copper (II) sulfate pentahydrate	Not Applicable	Not Applicable	Not Applicable

3. Dangerous Substances Safety Management Act

3.1 Not relevant

4. Wastes Control Act

4.1 Follow article 13 of the act to dispose the product waste

5. Other regulations

KECI Number

Not in compliance with the inventory

Section 16: Other information

OTHER INFORMATION:

PREPARATION 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. BIOMAX, Inc., 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.

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