RESEARCH USE ONLY

LOTI LABS

GHK-Cu 50mg

Safety Data Sheet

Form	Peptide substance
Primary CAS	89030-95-5
Primary MW	402.92 g/mol
DOCUMENT ID	LL-SDS-4517-001
REVISION DATE	2026-10-22
VERSION	1.8

01. Identification

Product identifier	GHK-Cu 50mg
Other means of identification	Loti Labs catalog listing “GHK-Cu 50mg” (lotilabs.com product ID 4517); SDS document ID LL-SDS-4517-001.
Product type	Solid research material
Declared active component(s)	Copper tripeptide-1 (GHK-Cu) (50 mg)
Primary active CAS number	89030-95-5
Primary active molecular formula	C14H23CuN6O4+
Primary active molecular weight	402.92 g/mol
Primary active PubChem CID	71587328
Recommended use	Research laboratory chemical for in-vitro scientific research and development.
Restrictions on use	Not for human or veterinary use. Not for food, drug, cosmetic, household, agricultural, clinical, therapeutic, or diagnostic applications.

Supplier details

Company	Loti Labs
Address	1204 S Broad St, Brooksville, FL 34601, United States
Telephone	877-LOTI-LAB (877-568-4522)
Website	https://lotilabs.com/
Emergency contact	CHEMTREC
Emergency phone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 hours/day; 7 days/week

02. Hazard(s) identification

OSHA/GHS classification	Not classified as hazardous under 29 CFR 1910.1200 on the reviewed evidence for the active material in the supplied solid. No GHS health-hazard class is assigned; biological activity, fine-powder exposure and data limitations are addressed under hazards not otherwise classified.
Signal word	None assigned (no hazard class triggered).
Hazard pictograms	None assigned.
Hazard statements	None assigned. See hazards not otherwise classified below.
Hazards not otherwise classified	Fine powder may cause mechanical irritation. Treat as a potentially bioactive material of unknown toxicity.
Unknown acute toxicity	Not applicable to a single-substance product; available acute toxicity information is summarized in Section 11.

Prudent laboratory handling

P264 Wash hands and exposed skin thoroughly after handling.

P280 Wear protective gloves, protective clothing, and eye protection.

P501 Dispose of contents/container in accordance with applicable regulations.

These are supplemental safe-handling statements for the completed classification stated above; they do not assign an additional GHS hazard class.

03. Composition / information on ingredients

Component	CAS	Formula	MW	Declared amount
Copper tripeptide-1 (GHK-Cu)	89030-95-5	C14H23CuN6O4+	402.92	50 mg

04. First-aid measures

Inhalation	Move person to fresh air. Keep at rest. Obtain medical advice if symptoms develop or persist.
Skin contact	Remove contaminated clothing. Wash thoroughly with soap and water. Seek medical advice if irritation develops.
Eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Obtain medical attention if irritation persists.
Ingestion	Rinse mouth. Do not induce vomiting unless directed by medical personnel. Contact a poison center or physician if swallowed or symptoms occur.
Most important symptoms/effects	No product-specific clinical data available. Exposure may cause mechanical irritation.
Immediate medical attention	Treat symptomatically. No specific antidote known.

05. Fire-fighting measures

Suitable extinguishing media	Water spray, dry chemical, carbon dioxide, or foam appropriate to the surrounding fire.

Unsuitable extinguishing media	No substance-specific restriction identified. Avoid methods that disperse dust.
Specific hazards	Organic nitrogen-containing peptide solid. Thermal decomposition may generate carbon oxides and nitrogen oxides. Thermal decomposition may also release copper oxides.
Protective equipment	Firefighters should wear full protective equipment and positive-pressure self-contained breathing apparatus.

06. Accidental release measures

Personal precautions

Restrict access. Avoid dust formation and all contact. Ensure adequate ventilation. Wear PPE described in Section 8.

Environmental precautions

Prevent release to drains, sewers, surface water, and soil.

Containment and cleanup

Gently collect without raising dust using suitable tools or a HEPA-filtered vacuum. Place in a sealed, labeled container. Clean affected surfaces and dispose of waste in accordance with Section 13.

07. Handling and storage

Precautions for safe handling

Handle as a potentially bioactive research substance of unknown toxicity. Conduct weighing, transfer, and reconstitution in a certified chemical fume hood, ventilated balance enclosure, or other effective containment. Avoid generating or breathing dust or aerosols. Avoid eye, skin, and clothing contact. Do not eat, drink, smoke, or apply cosmetics in work areas. Wash thoroughly after handling.

Storage conditions

Store tightly closed, dry, and protected from light and moisture. Follow the lot-specific storage condition shown on the product label. Long-term storage of dry peptides is commonly at −20 °C or colder; do not assign a shelf life beyond supplier documentation.

Incompatibilities

Strong oxidizing agents, strong acids, strong bases, excessive heat, moisture, direct sunlight, and ultraviolet light.

As a copper-chelate peptide, storage under inert, desiccated conditions helps limit oxidative degradation.

08. Exposure controls / personal protection

Occupational exposure limits

No OSHA PEL, NIOSH REL, or ACGIH TLV identified for the peptide as such. Copper (as Cu): OSHA PEL 1 mg/m³ for dusts and mists (8-h TWA, 29 CFR 1910.1000 Table Z-1); NIOSH REL 1 mg/m³; ACGIH TLV 1 mg/m³ (dusts and mists, as Cu). These limits apply to the copper content; copper is about 15.8% of the substance. Maintain exposure as low as reasonably achievable.

Engineering controls

Use local exhaust ventilation or a certified containment device for open handling of powder. Larger-scale work should use closed transfer or glovebox/isolator controls. Provide an accessible eyewash and safety shower.

Personal protective equipment

Eye / face protection	Safety glasses with side shields as a minimum; chemical splash goggles for dust, aerosol, or splash-generating tasks.

Hand protection	Disposable nitrile gloves. Inspect before use; change immediately if contaminated, damaged, or degraded. Consider double gloves for neat powder.
Skin protection	Laboratory coat, long trousers, and closed-toe footwear. Add a chemical-resistant apron or disposable coverall for higher-exposure work.
Respiratory protection	Normally unnecessary inside effective containment. If controls cannot prevent particulate exposure, use a NIOSH-approved particulate respirator under a compliant program (29 CFR 1910.134).
Hygiene	Wash hands after handling and before breaks. Remove contaminated clothing. Decontaminate work surfaces and equipment.

PPE must be selected by the employer based on task-specific hazard assessment, quantity, physical form, and exposure potential.

09. Physical and chemical properties

Physical state	Solid
Appearance	Lyophilized powder (see Color).
Color	Blue (batch COA sample description: “Blue lyophilized powder”).
Odor / odor threshold	No reliable product-specific data available
Melting point / freezing point	No reliable data available
Boiling point / range	Not applicable / decomposes; no reliable data available
Flammability	No reliable data available
Lower / upper flammability or explosion limits	Not applicable (solid); no minimum explosible concentration (MEC) data are available for dispersed dust.
Flash point	Not applicable (solid)
Auto-ignition / decomposition temperature	No reliable data available
pH	Not applicable (dry solid)
Kinematic viscosity	Not applicable to solid
Solubility	Formulation, pH, and lot dependent
Partition coefficient	No experimental data available
Vapor pressure / relative vapor density	Vapor pressure: negligible (non-volatile solid). Relative vapor density: not applicable (solid).
Evaporation rate	Not applicable (non-volatile solid).
Specific gravity / relative density	Not determined
Particle characteristics	No lot-specific particle-size data available
Primary molecular formula	C14H23CuN6O4+
Primary molecular weight	402.92 g/mol

Stability in solution	Subject to hydrolytic and oxidative degradation typical of peptides. Protect from light and microbial contamination; use a laboratory-established stability period for the prepared solution.

Note: GHK-Cu is a copper(II) chelate typically described in the literature as a blue to blue-green powder. The batch COA describes the material as a blue lyophilized powder; this SDS classification does not depend on color.

Physicochemical summary: non-volatile solid with negligible vapor pressure; a sharp melting point is typically not observed because the material chars or decomposes on heating. Flash point and pH are not applicable to the dry solid. Solution pH depends on concentration and buffer.

10. Stability and reactivity

Reactivity	No dangerous reaction known under recommended handling and storage conditions.
Chemical stability	Expected to be stable as dry material when stored as directed; peptide may undergo hydrolytic or oxidative degradation.
Possibility of hazardous reactions	Hazardous polymerization is not expected.
Conditions to avoid	Heat, moisture, direct sunlight, UV exposure, dust generation, and prolonged exposure to air.
Incompatible materials	Strong oxidizers, strong acids, and strong bases.
Hazardous decomposition products	Carbon monoxide, carbon dioxide, nitrogen oxides, and other irritating or toxic fumes under fire or thermal decomposition conditions; copper oxides may also form.

11. Toxicological information

Toxicological assessment: Available substance-specific information does not meet the criteria for an additional GHS health-hazard classification beyond the hazards stated in Section 2. Limited toxicological data do not establish absence of hazard.

Likely routes of exposure	Inhalation, eye contact, skin contact, and ingestion.
Acute toxicity	No reliable quantitative oral, dermal, or inhalation LD_{50}/LC_{50} data identified.
Skin corrosion / irritation	No reliable standardized test data identified. Mechanical or nonspecific irritation cannot be excluded.
Serious eye damage / irritation	No reliable standardized test data identified. Fine powder may mechanically irritate eyes.
Respiratory / skin sensitization	No reliable product-specific data identified. Sensitization cannot be excluded.
Carcinogenicity	Not listed as a carcinogen by IARC, NTP, or OSHA.

11. Toxicological information · continued

Germ cell mutagenicity	No reliable product-specific data identified.
Reproductive toxicity	No reliable product-specific data identified.
STOT, single exposure	No reliable product-specific data identified.
STOT, repeated exposure	No reliable product-specific data identified.

Aspiration hazard	Not applicable to supplied solid under normal conditions.
Symptoms / delayed effects	No product-specific symptoms established. Dust may cause mechanical irritation; data are insufficient.
Numerical measures of toxicity	No reliable numerical toxicity values available.
Interactive effects	No information on interactive effects was identified.
Alternative information / method	No read-across or structure-activity (SAR) information from other chemicals was used; where substance-specific data are unavailable this is stated for each endpoint.
Derived no-effect level (DNEL)	No product-specific DNEL has been derived.
Predicted no-effect concentration (PNEC)	No product-specific PNEC has been derived.

GHK-Cu is bioactive; effects at high concentrations cannot be excluded. No chronic toxicity studies were identified.

12. Ecological information

Ecotoxicity	No reliable product-specific fish, aquatic invertebrate, or algae toxicity data identified. Avoid environmental release.
Persistence / degradability	No reliable product-specific biodegradation data identified.
Bioaccumulative potential	No measured BCF or log Kow identified.
Mobility in soil / other adverse effects	No reliable data available.

Sections 12 to 15 are included for completeness; OSHA does not enforce their substantive content under Appendix D of 29 CFR 1910.1200.

13. Disposal considerations

Waste treatment

Dispose of material, contaminated PPE, and containers through a licensed waste contractor in accordance with federal, state, and local requirements. Do not discharge to drains, sewers, or waterways. Do not reuse empty containers. The waste generator is responsible for determining whether the waste meets hazardous-waste criteria at the time of disposal.

14. Transport information

Framework	UN number	Proper shipping name	Class	Packing group
U.S. DOT	Not applicable	Not regulated as dangerous goods	Not applicable	
IATA	Not applicable	Not regulated as dangerous goods	Not applicable	
IMDG	Not applicable	Not regulated as dangerous goods	Not applicable	

The stated transport classification applies to the supplied form and composition; quantity-, packaging-, carrier-, and mode-specific consignment requirements apply at shipment.

Environmental hazards	Not listed as a marine pollutant (49 CFR 172.101 Appendix B; IMDG Code). No aquatic-toxicity data meeting the UN environmentally hazardous substance criteria were identified for the product.

Transport in bulk	Not applicable. The product is supplied in non-bulk packagings and is not transported in bulk under IMO instruments (MARPOL Annex II / IBC Code).
Special precautions	No special transport precautions beyond keeping containers closed and protected from heat, moisture, light and physical damage.

Transport determination: this solid product does not meet the criteria of a U.S. DOT, IATA or IMDG dangerous-goods class and is not regulated as dangerous goods in the supplied form.

15. Regulatory information

Jurisdiction: this SDS is prepared for supply and use in the United States under the OSHA Hazard Communication Standard (29 CFR 1910.1200). Active ingredient CAS number(s) assessed: 89030-95-5. U.S. TSCA: no exact CAS match on that public inventory (89030-95-5); confidential identities are not visible in the public file. California Proposition 65: no exact active-ingredient CAS match on the official list dated July 31, 2026. CERCLA/SARA: copper tripeptide-1 (GHK-Cu) is a copper compound. 40 CFR 302.4 lists “Copper and compounds” as a broad class for which no reportable quantity is assigned; no other component is listed. EPCRA Section 313 supplier notification (40 CFR 372.45): this product contains a toxic chemical subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act and 40 CFR Part 372: Copper compounds (category N100), as copper tripeptide-1, about 100% by weight (copper about 15.8% by weight). Threshold and release-reporting duties remain quantity- and use-dependent. Sources checked: EPA TSCA non-confidential Inventory (July 2026), OEHHA Proposition 65 list (July 31, 2026), 40 CFR 302.4 and 40 CFR 372.65. Public-inventory status is not product approval or authorization.

16. Other information

Document ID	LL-SDS-4517-001
REVISION DATE	2026-10-22
VERSION	1.8
Prepared for	Loti Labs
Basis	OSHA Hazard Communication Standard, 29 CFR 1910.1200, including Appendix D; OSHA HCS 2024 alignment (primarily GHS Revision 7). Jurisdiction: United States; Section 14 covers U.S.-origin shipments under 49 CFR, the IATA Dangerous Goods Regulations and the IMDG Code.

Revision history	Revision 1.8 (2026-10-22): final line-by-line consistency review of all sections; Section 5 unsuitable extinguishing media stated (Appendix D 5(a)); Section 8 copper exposure limits completed; Section 9 appearance aligned with the COA color; wording, spelling (U.S.), units and batch-method text standardized. Revision 1.7 (2026-10-18): checked against the batch Certificate(s) of Analysis listed below; batch-documentation statements (assay, counter-ion, water and solvent content) corrected to match what the batch COAs actually report; Section 1 other means of identification completed; Section 2 unknown-acute-toxicity statement added (Appendix D 2(e)); Section 9 completed for all Appendix D properties (color, flammability limits, vapor density, evaporation rate, particle characteristics); Section 11 interactive-effects and data-basis statements added (Appendix D 11(e), 11(g)); Section 14 environmental-hazard, bulk-transport and special-precaution entries completed; Section 15 limited to U.S. federal and state requirements (non-U.S. inventory statements removed); Section 15 copper-compound status (CERCLA 302.4 and EPCRA 313 N100) and Section 8 copper exposure limits added; Sections 5 and 10 hazardous decomposition products aligned with the elemental composition of the ingredients. Revision 1.6 (2026-10-03): completed manual identity, blend-component, classification, transport and regulatory review; removed superseded and copied-template language; reconciled Sections 2, 3, 9, 11, 14 and 15.
Batch documentation reviewed	Bioviridian COA (verification code COA5339), lot LL-GHK-526, dated 2026-06-17: identity by MALDI-MS (mass 403.2 Da); purity 99.8% (RP-HPLC, 214 nm); measured content 51.24 mg. This SDS is product-level; lot-specific identity, purity and content are governed by the batch Certificate of Analysis.

Principal sources consulted

PubChem. Copper tripeptide-1 (GHK-Cu), Compound Summary, CID 71587328. National Center for Biotechnology Information. https://pubchem.ncbi.nlm.nih.gov/compound/71587328. Accessed 2026-07-15.

OSHA. Hazard Communication Standard, 29 CFR 1910.1200, including Appendix D. https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200. Accessed 2026-07-15.

OSHA. Hazard Communication Standard Final Rule (2024). https://www.osha.gov/hazcom/rulemaking. Accessed 2026-07-15.

United Nations. Globally Harmonized System, Revision 7 (2017). https://unece.org/transport/dangerous-goods/ghs-rev7-2017. Accessed 2026-07-15.

NTP / IARC. Report on Carcinogens and IARC classifications. https://ntp.niehs.nih.gov/whatwestudy/assessments/cancer/roc; https://monographs.iarc.who.int/agents-classified-by-the-iarc/. Accessed 2026-07-15.

EPA. TSCA Chemical Substance Inventory, non-confidential portion (July 2026 release). https://www.epa.gov/tsca-inventory. Accessed 2026-10-18.

OEHHA. Proposition 65 List of chemicals known to the State of California to cause cancer or reproductive toxicity (list dated July 31, 2026). https://oehha.ca.gov/proposition-65/proposition-65-list. Accessed 2026-10-18.

Key abbreviations

CAS, Chemical Abstracts Service · GHS, Globally Harmonized System · IATA, International Air Transport Association · IMDG, International Maritime Dangerous Goods · NIOSH, National Institute for Occupational Safety and Health · OSHA, Occupational Safety and Health Administration · PPE, Personal protective equipment · STOT, Specific target organ toxicity.

Document review and approval

By signing below, the reviewer confirms that the supplied form, composition, hazard classification, transport classification and regulatory content of this safety data sheet have been reviewed and are approved for release.

CHECKED BY	Dr Afroza Begum

CREDENTIALS	PhD in Biosciences
DATE	10/11/2026
SIGNATURE	Afroza Begum

Scope of review: Reviewed for content, classification, labelling and transport under 29 CFR 1910.1200 (Appendices A to D) and 49 CFR. Compound identity was checked against public references (PubChem, CAS) and the supplier’s product specification. Batch composition, purity and certificates of analysis were not verified as part of this review. Transport classification reviewed for consistency with 49 CFR; classification for shipment remains the shipper’s responsibility. Applies to version 1.8 dated 2026-10-22 only.

PEPTIDE PURITY. SCIENCE DELIVERED.

This SDS is subject to periodic review and revision when material new hazard information becomes available or applicable regulatory requirements change.

This SDS does not replace institutional risk assessment.

This SDS is not a certification of product safety.