



SAFETY DATA SHEET

GHS / OSHA HazCom 2012 Compliant

Minuteman Peptides, LLC

Kisspeptin-10

CAS: 374675-21-5

Formula: C63H83N17O14

Document ID: 3fb12599

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Version: 1.0

Section 1 — Product and Company Identification

Product Name	Kisspeptin-10
Synonyms	Kisspeptin-10; 374675-21-5; Kisspeptin-10 (human)
CAS Number	374675-21-5
Molecular Formula	C63H83N17O14
IUPAC Name	(2S)-N-[[[(2S)-1-[[[(2S)-4-amino-1-[[[(2S)-1-[[[(2S)-1-[[2-[[[(2S)-1-[[[(2S)-1-[[[(2S)-1-amino-1-oxo-3-phenylpropan-2-yl]amino]-5-(diaminomethylideneamino)-1-oxopentan-2-yl]amino]-4-methyl-1-oxopentan-2-yl]amino]-2-oxoethyl]amino]-1-oxo-3-phenylpropan-2-yl]amino]-3-hydroxy-1-oxopropan-2-yl]amino]-1,4-dioxobutan-2-yl]amino]-3-(1H-indol-3-yl)-1-oxopropan-2-yl]-2-[[[(2S)-2-amino-3-(4-hydroxyphenyl)propanoyl]amino]butanediamide
Identified Uses	Research laboratory chemical for in vitro scientific research and development use only.
Restriction on Use	Not for human or veterinary use. Not for food, drug, cosmetic, household, agricultural, clinical, therapeutic, or diagnostic applications.

Manufacturer / Supplier

Company	Minuteman Peptides, LLC
Address	53 Knox Trail, Suite 200, Acton, MA 01720, US
Phone	978-596-1533
Website	https://minutemanpeptides.com/
Emergency Contact	CHEMTREC
Emergency Phone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day, 7 Days/week

Section 2 — Hazard Identification

Classification of the substance

Not classified based on currently available data; however, data is limited and hazards cannot be fully characterized. The absence of classification should not be interpreted as a determination of the absence of hazard.

Classification has been conducted in accordance with 29 CFR 1910.1200 (OSHA HazCom 2012) and GHS Rev.8 using all available data and scientifically valid weight-of-evidence approaches (GHS Rev.8 Chapter 1.3.2.4), including read-across from chemical class and structural considerations where substance-specific study data is not available.

Signal Word: **None**

GHS Pictograms:

None required based on classification.

Hazard Statements

None. This substance is not classified for any GHS hazard class based on available data.

Precautionary Statements

- P261: Avoid breathing dust, fume, gas, mist, vapors, or spray.
- P264: Wash hands and exposed skin thoroughly after handling.
- P280: Wear protective gloves, protective clothing, and eye/face protection.
- P501: Dispose of contents and container in accordance with local, regional, national, and international regulations.

Precautionary statements are provided as best practice for handling substances with limited toxicological data, and are not a declaration of GHS classification.

Hazards Not Otherwise Classified (HNOC)

None known based on available data and weight-of-evidence assessment. The toxicological properties of this substance have not been fully characterized; handle as a potentially bioactive substance of unknown toxicity.

Section 3 — Composition / Information on Ingredients

Single-substance product. Chemical identity:

Ingredient	CAS Number	Mol. Formula	Mol. Weight	Concentration
Kissseptin-10	374675-21-5	C63H83N17O14	1302.4 g/mol	>98% (research grade)

Impurities

No hazardous impurities known to be present above the GHS classification thresholds specified in 29 CFR 1910.1200 Appendix A. Residual synthesis reagents, solvents, and counter-ions may be present at levels consistent with research-grade (>98% purity) material. Balance: non-hazardous impurities. Refer to the accompanying Certificate of Analysis (CoA) for the lot-specific impurity profile.

Section 4 — First Aid Measures

Eye Contact

Rinse cautiously with water for several minutes. If irritation persists, seek medical advice.

Skin Contact

Wash with soap and water. Remove contaminated clothing and wash before reuse. If irritation persists, seek medical advice.

Inhalation

Move affected person to fresh air. If symptoms develop, seek medical advice.

Ingestion

Rinse mouth thoroughly with water. If large amounts are swallowed or if symptoms develop, seek medical advice. Do not induce vomiting unless directed by medical personnel.

Note to Physician

Treat symptomatically. No specific antidote known.

Section 5 — Fire Fighting Measures

Flash Point: *Not determined*

Suitable Extinguishing Media

Use extinguishing media appropriate to the surrounding fire conditions. Carbon dioxide (CO₂), dry chemical powder, foam, or water spray.

Special Hazards

May produce toxic gases upon combustion. Carbon monoxide and other combustion products may be generated.

Protective Equipment for Firefighters

Wear self-contained breathing apparatus (SCBA) and full protective gear. Do not enter fire area without proper protective equipment.

Section 6 — Accidental Release Measures

Personal Precautions

Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment as described in Section 8.

Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not allow the product to enter drains, sewers, or waterways.

Containment and Cleanup

Sweep up and shovel. Keep in suitable, closed containers for disposal. Avoid raising dust. Clean contaminated surface thoroughly. Dispose of waste in accordance with local regulations (see Section 13).

Section 7 — Handling and Storage

Handling Precautions

Handle only in a chemical fume hood or equivalent local exhaust ventilation (e.g., ventilated balance enclosure) when weighing or manipulating the dry powder to minimize generation of and exposure to airborne dust, in accordance with the OSHA Laboratory Standard (29 CFR 1910.1450) and Hazard Communication Standard (29 CFR 1910.1200). As a synthetic peptide of incompletely characterized toxicity, treat as a potentially hazardous research chemical and apply the precautionary principle. Wear appropriate personal protective equipment: chemical-resistant nitrile gloves (inspect before use; replace immediately if contaminated); a buttoned lab coat, and ANSI Z87.1-compliant safety eyewear (chemical splash goggles recommended when preparing solutions). Where engineering controls cannot reliably prevent inhalation of dust, use a NIOSH-approved particulate respirator (e.g., N95 or higher) selected under a written respiratory

protection program meeting 29 CFR 1910.134. Avoid all routes of exposure: do not breathe dust or aerosols, and avoid contact with skin, eyes, and clothing. Do not eat, drink, smoke, or apply cosmetics in areas where the substance is handled. Wash hands, forearms, and face thoroughly with soap and water after handling and before breaks and at the end of the work shift. Use static-dissipative techniques and avoid creating dust clouds; clean spills promptly using HEPA-filtered vacuum or damp wiping rather than dry sweeping. Keep containers tightly closed when not in use, and label all secondary containers (including reconstituted solutions) per 29 CFR 1910.1200(f). When reconstituting, allow the sealed vial to equilibrate to room temperature before opening to minimize condensation and hygroscopic uptake, then briefly centrifuge to bring lyophilized material to the bottom of the vial before adding sterile solvent.

Storage Conditions

Store the lyophilized (dry) peptide tightly closed in its original container under an inert, dry atmosphere (argon or nitrogen headspace recommended) and protected from light, moisture, and heat. Consistent with general guidance for synthetic peptides (e.g., published peptide handling and storage guidelines), long-term storage of the lyophilized solid is recommended at -20 degC or colder in a frost-free-exempt (manual-defrost) freezer, with desiccant, to limit hydrolytic and oxidative degradation; storage at -80 degC may further extend stability. Allow vials to reach room temperature in a desiccator before opening to prevent condensation onto the hygroscopic solid. After reconstitution in an appropriate sterile aqueous buffer, divide into single-use aliquots to avoid repeated freeze-thaw cycles, which can promote aggregation and degradation. Store reconstituted aliquots frozen at -20 degC or -80 degC; minimize time at 2-8 degC. Keep away from sources of ignition, oxidizers, strong acids and bases, and incompatible materials (see below). Store in a secure, access-controlled laboratory area segregated from food, beverages, and unrelated incompatible chemicals, and maintain an up-to-date chemical inventory as required under 29 CFR 1910.1450. Do not return unused material to the original container. Observe the manufacturer's lot-specific retest/expiration date; this SDS does not establish a shelf life.

Incompatibilities

Avoid contact with strong oxidizing agents (e.g., peroxides, hypochlorites, permanganates, nitric acid), which can oxidize tryptophan and tyrosine residues present in kisspeptin-10 and degrade the peptide backbone. Avoid strong acids and strong bases, which can catalyze hydrolysis of amide (peptide) bonds and deamidation of asparagine residues. Avoid strong reducing agents in storage (although controlled use of reductants such as DTT or TCEP may be appropriate in working solutions, although note that kisspeptin-10 contains no cysteine residues and thus no disulfide bonds). Protect from moisture, atmospheric CO₂, and humid air (the lyophilized solid is hygroscopic) and from prolonged exposure to light and elevated temperatures, all of which can accelerate degradation. Avoid contact with heavy-metal ions (e.g., Cu²⁺, Fe³⁺), which can catalyze oxidation of susceptible residues, and with proteases or microbial contamination in aqueous solution. Incompatible container materials are not specifically documented in authoritative sources for this substance; borosilicate glass or low-binding polypropylene vials are generally suitable for peptide storage. Hazardous decomposition products on combustion or strong heating may include carbon monoxide, carbon dioxide, and oxides of nitrogen (NO).

Section 8 — Exposure Controls / Personal Protection

Exposure Limits

No regulatory occupational exposure limits (OEL) have been established by OSHA, ACGIH, NIOSH, or equivalent bodies. No biological exposure indices (BEIs) have been established. Control exposure to the lowest level reasonably achievable (ALARA) using the engineering controls and PPE specified below. Handle as a potentially bioactive substance of unknown toxicity.

Engineering Controls

Use in a laboratory setting equipped with adequate general ventilation (typically 6-12 air changes per hour). Weighing, dissolution, and any manipulation of the dry powder that could generate dust or aerosols should be conducted inside a

certified chemical fume hood, ventilated balance enclosure, or Class II biological safety cabinet to minimize inhalation exposure. Where powder handling cannot be enclosed, use local exhaust ventilation at the point of generation. Provide readily accessible emergency eyewash and safety shower in the work area per ANSI Z358.1. Prohibit eating, drinking, smoking, and food storage in areas where this substance is handled. Maintain good housekeeping; promptly clean spills using HEPA vacuum or wet methods rather than dry sweeping. Hand-washing stations should be available, and personnel must wash hands thoroughly after handling and before breaks.

Personal Protective Equipment

Respiratory Protection: Respiratory protection is not normally required when handling small quantities of solution in a properly functioning fume hood or biosafety cabinet. If engineering controls are inadequate or when weighing/handling the dry powder outside enclosed containment, wear a NIOSH-approved (42 CFR Part 84) particulate respirator with N95 or higher filter efficiency. For larger-scale or dustier operations, use a NIOSH-approved P100 filtering facepiece or a powered air-purifying respirator (PAPR) with HEPA filters. Respirator selection, fit-testing, medical clearance, and program administration must comply with OSHA 29 CFR 1910.134.

Hand Protection: Wear chemically resistant, impervious gloves compliant with EN ISO 374 / ANSI-ISEA 105. Nitrile gloves of at least 0.11 mm (4 mil) thickness are generally suitable for incidental contact with peptide solutions; use double gloving for prolonged handling or when handling concentrated stocks or the dry powder. Inspect gloves before use, replace immediately if torn, punctured, or contaminated, and remove using proper technique to avoid skin contamination. Wash hands with soap and water after glove removal.

Eye / Face Protection: Wear ANSI Z87.1-compliant (or EN 166-compliant) chemical safety glasses with side shields as a minimum. Use tight-fitting chemical splash goggles when there is potential for splash, aerosol generation, or when handling solutions under pressure. A face shield worn over goggles is recommended for operations with significant splash or dust potential. Do not wear contact lenses when handling this material unless protective eyewear is also worn. An emergency eyewash station meeting ANSI Z358.1 must be available within 10 seconds of the work area.

Skin Protection: Wear a long-sleeved laboratory coat or chemical-resistant gown that is buttoned/closed, full-length pants, and closed-toe chemically resistant footwear. For operations with splash potential or when handling significant quantities, wear a chemical-resistant apron over the lab coat. Remove contaminated clothing promptly and launder before reuse; do not take contaminated PPE home. Cover any open cuts or abrasions with occlusive dressings before donning gloves. Handle as a potentially bioactive substance of unknown toxicity and minimize all skin contact.

Section 9 — Physical and Chemical Properties

Physical State	Solid (research-grade lyophilised powder or crystalline solid)
Appearance	White lyophilized powder
Odor	Odorless
Odor Threshold	Not available.
Boiling Point	Not determined
Melting Point	Not determined
Flash Point	Not determined
Auto-ignition Temperature	No data available.
Decomposition Temperature	No experimental data available.
Vapor Pressure	Not determined
Vapor Density	Not determined
Specific Gravity	Not determined

Partition Coefficient (log K_{ow})	No experimental data available.
Solubility	Soluble in water, soluble in DMSO
Stability in Solution	Subject to hydrolytic and oxidative degradation typical of the chemical class; store reconstituted solutions refrigerated or frozen, protect from light, and use within the stability window indicated on the Certificate of Analysis.
pH	Not determined
Molecular Weight	1302.4 g/mol
Molecular Formula	C ₆₃ H ₈₃ N ₁₇ O ₁₄

Section 10 — Stability and Reactivity

Chemical Stability: Stable under normal conditions of use, storage, and transport.

Conditions to Avoid: Excessive heat, open flames, sparks, incompatible materials.

Incompatible Materials: Avoid contact with strong oxidizing agents (e.g., peroxides, hypochlorites, permanganates, nitric acid), which can oxidize tryptophan and tyrosine residues present in kisspeptin-10 and degrade the peptide backbone. Avoid strong acids and strong bases, which can catalyze hydrolysis of amide (peptide) bonds and deamidation of asparagine residues. Avoid strong reducing agents in storage (although controlled use of reductants such as DTT or TCEP may be appropriate in working solutions, although note that kisspeptin-10 contains no cysteine residues and thus no disulfide bonds). Protect from moisture, atmospheric CO₂, and humid air (the lyophilized solid is hygroscopic) and from prolonged exposure to light and elevated temperatures, all of which can accelerate degradation. Avoid contact with heavy-metal ions (e.g., Cu²⁺, Fe³⁺), which can catalyze oxidation of susceptible residues, and with proteases or microbial contamination in aqueous solution. Incompatible container materials are not specifically documented in authoritative sources for this substance; borosilicate glass or low-binding polypropylene vials are generally suitable for peptide storage. Hazardous decomposition products on combustion or strong heating may include carbon monoxide, carbon dioxide, and oxides of nitrogen (NO).

Hazardous Decomposition Products: Upon combustion or decomposition may produce: carbon monoxide (CO), carbon dioxide (CO₂), nitrogen oxides (NO_x).

Hazardous Polymerization: Will not occur.

Section 11 — Toxicological Information

The toxicological properties of this substance have not been fully characterized. Where no authoritative study data was identified, endpoint classifications are based on a weight-of-evidence approach using read-across from the compound's chemical class and structural features, per GHS Rev.8 Chapter 1.3.2.4. "Not classified" entries below mean "not classified based on currently available data" — hazards cannot be excluded.

Acute Toxicity: No substance-specific acute toxicity (LD₅₀/LC₅₀) values for Kisspeptin-10 (CAS 374675-21-5) are reported by authoritative regulatory sources (OSHA, NIOSH, NTP, EPA, ECHA, IARC). A published safety evaluation (Ramaswamy et al., reported in PMC8277707) found that once-daily intravenous administration of KP-10 (Kisspeptin--10/metastatin 45-54) to dogs for 14 consecutive days was tolerated, with 1000 ug/kg/day identified by the authors as a No Observed Adverse Effect Level (NOAEL); however, this single non-rodent study is not sufficient to derive a GHS acute toxicity category by the oral, dermal, or inhalation routes. Acute toxicity by the oral, dermal, and inhalation routes is not classified based on currently available data; hazards cannot be excluded (GHS Rev.8, S1.3.2.4). The toxicological properties of this substance are not fully characterized. Treat as potentially hazardous and minimize all routes of exposure.

Skin Corrosion / Irritation: No experimental skin corrosion/irritation data for Kisspeptin-10 (CAS 374675-21-5) are available from authoritative sources (ECHA, OSHA, NIOSH). Not classified based on currently available data; hazards cannot be excluded (GHS Rev.8, S1.3.2.4). The toxicological properties of this substance are not fully characterized.

As a synthetic decapeptide research material, mechanical or chemical irritation of skin upon direct contact cannot be ruled out; avoid skin contact and use appropriate personal protective equipment.

Serious Eye Damage / Irritation: No experimental serious eye damage/eye irritation data for Kisspeptin-10 (CAS 374675-21-5) are available from authoritative sources (ECHA, OSHA, NIOSH). Not classified based on currently available data; hazards cannot be excluded (GHS Rev.8, S1.3.2.4). The toxicological properties of this substance are not fully characterized. Particulate or solution contact with the eye may produce mechanical irritation; eye protection is required during handling.

Skin / Respiratory Sensitization: No experimental respiratory or skin sensitization data for Kisspeptin-10 (CAS 374675-21-5) are available from authoritative sources (ECHA, OSHA, NIOSH). The substance is not listed as a respiratory or skin sensitizer by OSHA, NIOSH, or ECHA. Not classified based on currently available data; hazards cannot be excluded (GHS Rev.8, S1.3.2.4). Synthetic peptides administered parenterally have, in some cases, been associated with immunogenic responses; this hazard endpoint is therefore not fully characterized, and sensitization potential cannot be excluded. Avoid repeated or prolonged exposure.

Germ Cell Mutagenicity / Genotoxicity: Not classified based on currently available data; hazards cannot be excluded. Weight-of-evidence assessment applied using read-across from chemical class and structural considerations (GHS Rev.8 Chapter 1.3.2.4); no authoritative substance-specific study data identified.

Carcinogenicity: Kisspeptin-10 (CAS 374675-21-5) is not listed as a carcinogen by IARC, the U.S. National Toxicology Program (NTP) Report on Carcinogens, OSHA (29 CFR 1910.1003), ACGIH, or the EU CLP harmonized classification list (ECHA C&L). No long-term carcinogenicity bioassays for this substance have been identified in the peer-reviewed literature. Not classified based on currently available data; hazards cannot be excluded (GHS Rev.8, S1.3.2.4). The toxicological properties of this substance are not fully characterized.

Reproductive Toxicity: No standard guideline reproductive or developmental toxicity studies (e.g., OECD TG 414, 416, 421/422) for Kisspeptin-10 (CAS 374675-21-5) are reported in authoritative databases (ECHA, NTP, EPA). The substance is not included on the EU CLP harmonized list of reproductive toxicants or on the California Proposition 65 list for reproductive toxicity. Not classified based on currently available data; hazards cannot be excluded (GHS Rev.8, S1.3.2.4). The toxicological properties of this substance are not fully characterized. Because endocrine-active substances may pose reproductive or developmental hazards, women who are pregnant, may become pregnant, or are breastfeeding should avoid handling this material.

Specific Target Organ Toxicity (STOT): STOT - Single Exposure (STOT-SE): No data from authoritative regulatory sources (ECHA, OSHA, NIOSH) are available for Kisspeptin-10 (CAS 374675-21-5). Not classified based on currently available data; hazards cannot be excluded (GHS Rev.8, S1.3.2.4). STOT - Repeated Exposure (STOT-RE): In a peer-reviewed 14-day repeat-dose intravenous study in dogs (PMC8277707, Ramaswamy et al.), KP-10 was tolerated up to 1000 ug/kg/day, which the authors identified as the NOAEL; no specific target organ toxicity was reported at that dose level under those study conditions. This single non-rodent dataset does not satisfy the data requirements for GHS STOT-RE classification by other routes (oral, dermal, inhalation). STOT-RE is therefore not classified based on currently available data; hazards cannot be excluded (GHS Rev.8, S1.3.2.4). The toxicological properties of this substance are not fully characterized; minimize all repeated occupational exposures.

Aspiration Hazard: Not classified based on currently available data; hazards cannot be excluded. Weight-of-evidence assessment applied using read-across from chemical class and structural considerations (GHS Rev.8 Chapter 1.3.2.4); no authoritative substance-specific study data identified.

Derived No-Effect Level (DNEL): No data available — no substance-specific DNEL has been derived.

Predicted No-Effect Concentration (PNEC): No data available — no substance-specific PNEC has been derived.

Section 12 — Ecological Information

No authoritative substance-specific ecotoxicity study data was identified. In the absence of experimental data, adverse environmental effects cannot be fully excluded.

Ecotoxicity: No substance-specific experimental aquatic toxicity data (e.g., fish LC50, Daphnia EC50, algal ErC50) for kisspeptin-10 (CAS 374675-21-5) were identified in authoritative sources including PubChem (CID 25240297), ECHA, EPA ECOTOX, or peer-reviewed literature. The substance is not listed on the ECHA Candidate List or classified under CLP for environmental hazards. Not classified as hazardous to the aquatic environment (acute or chronic) based on a weight-of-evidence assessment, given the absence of identified authoritative experimental data. Release to the environment should nevertheless be avoided in accordance with good laboratory practice.

Persistence and Degradability: No substance-specific experimental biodegradation, hydrolysis, or photodegradation studies for kisspeptin-10 were identified in PubChem, ECHA, or EPA databases. As a decapeptide composed solely of standard L-amino acid residues (C63H83N17O14, MW 1302.4), kisspeptin-10 would be expected to undergo enzymatic proteolysis in biological and environmental compartments; however, this is a structural inference and is not a substitute for experimental ready-biodegradability (OECD 301-series) data, which were not located.

Bioaccumulative Potential: No experimentally determined log Kow (octanol/water partition coefficient) or bioconcentration factor (BCF) for kisspeptin-10 was identified in PubChem (CID 25240297), ECHA, or EPA sources. Given the high molecular weight (1302.4 g/mol), multiple ionizable groups, and high polarity expected of a decapeptide, significant bioaccumulation in aquatic organisms is not anticipated, but no authoritative experimental BCF value is available to confirm this. The substance does not appear on PBT/vPvB listings.

Mobility in Soil: No substance-specific experimental data identified.

Other Adverse Effects: No other adverse environmental effects identified. The substance is not included on the Montreal Protocol list of ozone-depleting substances.

Section 13 — Disposal Considerations

Dispose of contents and container in accordance with all local, state, and federal regulations. Do not dispose of this material into sewers or waterways. Contact a licensed waste disposal company for disposal guidance.

US: Dispose in accordance with 40 CFR Parts 261-270 (RCRA). **EU:** Dispose according to Directive 2008/98/EC (Waste Framework Directive).

Section 14 — Transport Information

DOT (US)	Not regulated as dangerous goods under DOT (49 CFR) based on current classification.
IATA	Not regulated as dangerous goods under IATA Dangerous Goods Regulations based on current classification.
IMDG	Not regulated as dangerous goods or as a marine pollutant under the IMDG Code based on current classification.
UN Number	Not applicable.

Transport classifications above are based on the substance's intrinsic hazard classification; the shipper must independently verify the classification, packaging, labelling, and documentation requirements for their specific shipment configuration, quantity, and carrier (including airline policies) prior to dispatch.

Section 15 — Regulatory Information

United States

TSCA (Toxic Substances Control Act): May be eligible for exemption from TSCA inventory listing requirements under the R&D provisions of 40 CFR 720.36, depending on actual conditions of use. This substance is supplied solely for use in scientific research and development in small quantities; it is not intended for, and shall not be used for, any commercial manufacturing, processing, or distribution in commerce. The importer/end user is responsible for confirming that the R&D exemption criteria are met for their specific use. **OSHA HazCom 2012:** This SDS was prepared in accordance with 29 CFR 1910.1200 (HazCom 2012), aligned with the Globally Harmonized System (GHS) Rev. 8. **CERCLA / SARA Title III:** Not listed as a CERCLA Hazardous Substance (40 CFR 302.4); not subject to SARA 313 reporting based on available classification data. Users must independently verify applicability for their facility.

European Union

REACH (EC 1907/2006): Supplied solely for Scientific Research and Development (SR&D) use in quantities below 1 tonne per year per legal entity. Where applicable, this use may be exempt from REACH registration obligations under the scientific research and development provisions of REACH Article 3(23) and the conditions of Article 26(3); importers/users should independently verify the applicable exemption pathway for their specific use. If the substance is used as part of a formally notified Product and Process Oriented Research and Development (PPORD) programme, the separate notification procedure under REACH Article 9 (with a 5-year exemption renewable once) may apply instead. **CLP (EC 1272/2008):** Not classified under CLP based on available data; no harmonized classification entry identified in Annex VI of CLP or the ECHA Classification and Labelling (C&L) Inventory.

Canada

WHMIS 2015 / HPR: Not classified as a hazardous product under the Hazardous Products Act and Hazardous Products Regulations (SOR/2015-17) based on available data and weight-of-evidence assessment. Supplied for laboratory research use only. **DSL/NDSL:** Research-use exemption applies; substance is not intended for commercial import or manufacture in Canada.

Note: The regulatory statements above reflect the intended use of this substance for scientific research and development only and do not constitute a legal determination of regulatory status. If the substance is used outside the R&D exemption scope, users are solely responsible for independently verifying applicable regulatory obligations (TSCA, REACH, WHMIS, state, and local) for their specific use and jurisdiction prior to any such use.

Section 16 — Other Information

Document ID	3fb12599-8770-4a35-9e07-588b023d1e52
Revision Date	2026-07-18
Version	1.0
Prepared By	Prepared in accordance with GHS Rev.8 and OSHA HazCom 2012 (29 CFR 1910.1200). Independent review by a qualified chemical safety professional is recommended prior to use.

Revision History

Revision date: 2026-07-18

Version: 1.0

Change description: Initial issue. Document prepared in 16-section GHS Rev.8 / OSHA HazCom 2012 format

Sources Used

- PubChem (U.S. National Library of Medicine / NCBI) — <https://pubchem.ncbi.nlm.nih.gov>
- Peer-reviewed chemistry and toxicology literature (class-based read-across and weight-of-evidence assessment per GHS Rev.8 Chapter 1.3.2.4)
- OSHA HazCom 2012 / 29 CFR 1910.1200 Appendix A–C; GHS Rev.8; OECD Test Guidelines

Key to Abbreviations

CAS = Chemical Abstracts Service; GHS = Globally Harmonized System of Classification and Labelling of Chemicals; OSHA = U.S. Occupational Safety and Health Administration; HazCom = Hazard Communication Standard; REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals; CLP = Classification, Labelling and Packaging Regulation; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System; OEL = Occupational Exposure Limit; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; STOT = Specific Target Organ Toxicity; LD50 = Median Lethal Dose; LC50 = Median Lethal Concentration; PPE = Personal Protective Equipment; SCBA = Self-Contained Breathing Apparatus; R&D = Research and Development.

Disclaimer

DISCLAIMER: The information in this Safety Data Sheet is compiled from the authoritative sources cited above, supplemented by weight-of-evidence assessment based on the compound's chemical class and published literature. It is believed to be accurate as of the revision date but is provided "as is" without warranty of any kind, express or implied, including fitness for a particular purpose. The preparer of this document has not independently tested the substance described herein. Users bear sole responsibility for verifying all information, ensuring safe handling, and compliance with all applicable federal, state, provincial, and local regulations. This SDS is not a substitute for independent chemical safety assessment by a qualified professional. This product is intended for scientific research and development use only and is not for human consumption, drug, food, cosmetic, agricultural, or household use.

This SDS complies with GHS Revision 8 / UN GHS Rev.8 and OSHA HazCom 2012 (29 CFR 1910.1200).