Viking Stack Peptides

Tesamorelin

CAS: 218949-48-5
Formula: C221H366N72O67S

Document ID: 76e20142
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Version: 1.0

Section 1 — Product and Company Identification

Product Name	Tesamorelin
Synonyms	Tesamorelin; 218949-48-5; TH9507
CAS Number	218949-48-5
PubChem CID	16137828
Molecular Formula	C221H366N72O67S
IUPAC Name	(4S)-4-[[2-[[(2S)-5-amino-2-[[(2S)-5-amino-2-[[(2S)-2-[[(2S)-2-[[(2S)-2-[[(2S,3S)-2-[[(2S)-2-[[(2S)-5-amino-2-[[(2S)-2-[[(2S)-2-[[(2S)-6-amino-2-[[(2S)-2-[[(2S)-2-[[(2S)-2-[[(2S)-2-[[(2S)-5-amino-2-[[2-[[(2S)-2-[[(2S)-2-[[(2S)-6-amino-2-[[(2S)-2-[[(2S)-2-[[(2S)-2-[[(2S)-4-amino-2-[[(2S,3R)-2-[[(2S)-2-[[(2S,3S)-2-[[(2S)-2-[[(2S)-3-carboxy-2-[[(2S)-2-[[(2S)-2-[[(E)-hex-3-enoyl]amino]-3-(4-hydroxyphenyl)propanoyl]amino]propanoyl]amino]propanoyl]amino]propanoyl]amino]-3-methylpentanoyl]amino]-3-phenylpropanoyl]amino]-3-hydroxybutanoyl]amino]-4-oxobutanoyl]amino]-3-hydroxypropanoyl]amino]-3-(4-hydroxyphenyl)propanoyl]amino]-5-carbamimidamidopentanoyl]amino]hexanoyl]amino]-3-methylbutanoyl]amino]-4-methylpentanoyl]amino]acetyl]amino]-5-oxopentanoyl]amino]-4-methylpentanoyl]amino]-3-hydroxypropanoyl]amino]propanoyl]amino]-5-carbamimidamidopentanoyl]amino]hexanoyl]amino]-4-methylpentanoyl]amino]-4-methylpentanoyl]amino]-5-oxopentanoyl]amino]-3-carboxypropanoyl]amino]-3-methylpentanoyl]amino]-4-methylsulfanylbutanoyl]amino]-3-hydroxypropanoyl]amino]-5-carbamimidamidopentanoyl]amino]-5-oxopentanoyl]amino]-5-oxopentanoyl]amino]acetyl]amino]-5-[[(2S)-1-[[(2S)-4-amino-1-[[(2S)-5-amino-1-[[(2S)-… [truncated — full value in PDF metadata]
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	Viking Stack Peptides
Address	560, Fort Worth, TX 76137, United States
Phone	8178816217
Emergency Phone	8178816217

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
Tesamorelin	218949-48-5	C221H366N72O67S	5136 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 Tesamorelin (CAS 218949-48-5) as a potentially bioactive substance of unknown occupational toxicity. Follow OSHA HazCom 2012 (29 CFR 1910.1200) and general good chemical hygiene practice (29 CFR 1910.1450). Because the material is a lyophilized peptide powder that is readily aerosolized and hygroscopic, weigh and transfer only within a ventilated enclosure such as a Class II biosafety cabinet, a containment ventilated balance enclosure, or a fume hood; NIOSH recommends handling non-hazard-classified active pharmaceutical powders within containment primary engineering controls (C-PECs) to minimize inhalation exposure. Avoid generating dust, aerosols, or mists. Do not eat, drink, smoke, or apply cosmetics in work areas. Use personal protective equipment appropriate for handling powdered bioactive compounds: chemical-resistant nitrile gloves (double-gloving recommended per NIOSH guidance for hazardous drugs), a chemically resistant lab coat or disposable gown with closed cuffs, ANSI Z87.1-compliant safety eyewear, and, when engineering controls cannot fully contain airborne particulates, a NIOSH-approved N95 or higher respirator used within a written respiratory protection program (29 CFR 1910.134). Allow sealed containers of lyophilized peptide to warm to ambient temperature in a desiccator before opening to prevent moisture condensation and hydrolysis. Reseal containers tightly and immediately after use under an inert atmosphere (nitrogen or argon) where practical. Wash hands and exposed skin thoroughly after handling and before leaving the work area. Decontaminate work surfaces, balances, and reusable equipment after use. Ground and bond containers when transferring larger quantities to prevent electrostatic accumulation of fine powder.</p>

Storage Conditions

Store in the original tightly closed container, protected from light, moisture, and air. Consistent with general handling guidance for lyophilized peptides, keep the container in a desiccated environment and refrigerate or freeze at low temperature (typically <= -20 degC for long-term storage of the lyophilized solid; 2-8 degC for short-term storage) - refer to the certificate of analysis or manufacturer's product-specific stability data for the exact storage temperature and retest date, as authoritative stability values specific to Tesamorelin are not published in OSHA, NIOSH, EPA, ECHA, or PubChem records. Warm sealed vials to room temperature in a desiccator prior to opening to minimize condensation. Once reconstituted in aqueous or buffered solution, store refrigerated at 2-8 degC and aliquot to avoid repeated freeze-thaw cycles. Store away from strong oxidizers, strong acids, and strong bases and separated from incompatible materials and foodstuffs. Maintain in a secure, access-controlled area labeled in accordance with 29 CFR 1910.1200(f). Storage areas should be dry, well-ventilated, and equipped with secondary containment. Do not store above the temperature specified on the container label.

Incompatibilities

As a peptide containing a methionine residue, multiple amide bonds, and free amino/carboxyl side chains, Tesamorelin is expected to be incompatible with strong oxidizing agents (which can oxidize methionine and other residues), strong acids and strong bases (which can catalyze amide-bond hydrolysis and racemization), strong reducing agents, and reactive electrophiles such as aldehydes, acyl halides, and alkyl halides. Avoid prolonged exposure to moisture, elevated temperatures, direct sunlight, and UV light, all of which can accelerate degradation of the peptide. Avoid contact with heavy-metal ion contaminants that can catalyze oxidative degradation. No specific incompatibility data for Tesamorelin (CAS 218949-48-5) are listed in OSHA, NIOSH, EPA, ECHA, or PubChem authoritative records; the guidance above reflects general chemistry of peptides of this class.

Section 8 — Exposure Controls / Personal Protection

Exposure Limits

No regulatory occupational exposure limits (OEL) have been established by OSHA, ACGIH, NIOSH, or equivalent bodies for tesamorelin (CAS 218949-48-5). 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; where an employer-assigned internal control band or occupational exposure band (OEB) has been established for handling active pharmaceutical ingredients, adhere to that internal limit.

Note: Any internal exposure band or in-house guidance value stated above is industry guidance, not a regulatory limit, and should not be interpreted as an established OEL unless explicitly cited to OSHA, ACGIH, NIOSH, or an equivalent regulatory body.

Engineering Controls

Use in a facility designed for handling active pharmaceutical ingredients (APIs). Weighing, transfer, and preparation of dry powder or solutions should be performed within a validated containment device such as a ventilated enclosure, ducted fume hood, glove box, or Class II biological safety cabinet (BSC) capable of achieving surface and airborne concentrations as low as reasonably practicable. Provide local exhaust ventilation (LEV) at the point of dust or aerosol generation and maintain the handling area under negative pressure relative to surrounding rooms where feasible. Ensure the work area is equipped with an accessible emergency eyewash station and safety shower (ANSI Z358.1). Prohibit eating, drinking, smoking, and application of cosmetics in the work area. Provide hand-washing facilities and decontamination procedures at the exit of the controlled area. Store containers closed when not in use and clean spills promptly using HEPA-filtered vacuum or wet-wipe methods to avoid dust generation.

Personal Protective Equipment

Respiratory Protection: If engineering controls maintain airborne concentrations below applicable internal control-band limits, respiratory protection is generally not required. For weighing, open handling of dry powder, or any task with potential for aerosol/dust generation outside a containment device, wear a NIOSH-approved air-purifying respirator equipped with N100/P100 (or equivalent) particulate filters, or a powered air-purifying respirator (PAPR) with HEPA filters for higher exposure potential or extended tasks. All respirator use must comply with a written respiratory protection program meeting OSHA 29 CFR 1910.134 (medical clearance, fit-testing, and training).

Hand Protection: Wear chemically resistant, powder-free disposable gloves such as nitrile (recommended minimum thickness >=0.11 mm / 4-8 mil) meeting EN 374 / ASTM D6978. Double-gloving is recommended when handling the neat solid or concentrated solutions, consistent with practices for handling potent APIs of unknown toxicity. Inspect gloves before use, change immediately if contamination, tearing, or degradation is suspected, and at minimum every 30 minutes of continuous use or per manufacturer breakthrough data. Wash hands thoroughly with soap and water after glove removal.

Eye / Face Protection: Wear tightly-fitting chemical splash goggles meeting ANSI/ISEA Z87.1 (or EN 166) whenever solutions are handled or when there is any potential for splash, spray, or airborne particulate contact with the eyes. A full-face shield worn over goggles is recommended for pouring, dispensing, or reconstitution operations performed outside a fully enclosed containment device.

Skin Protection: Wear a chemically resistant, long-sleeved laboratory coat or disposable Tyvek-type coverall that fully covers the arms and torso, closed-toe non-absorbent chemically resistant footwear, and disposable sleeve covers if handling powder outside primary containment. Remove and launder or dispose of contaminated clothing before leaving the work area; do not take contaminated clothing home. If skin contact occurs, wash the affected area promptly with soap and water. Contaminated PPE should be disposed of as pharmaceutical/chemical waste in accordance with applicable EPA (RCRA) and local regulations.

Section 9 — Physical and Chemical Properties

Physical State	Solid (research-grade lyophilised powder or crystalline solid)

Appearance	White to off-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 Kow)	No experimental data available.
Solubility	Soluble in water; soluble in dilute acetic acid
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	5136 g/mol
Molecular Formula	C221H366N72O67S

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: As a peptide containing a methionine residue, multiple amide bonds, and free amino/carboxyl side chains, Tesamorelin is expected to be incompatible with strong oxidizing agents (which can oxidize methionine and other residues), strong acids and strong bases (which can catalyze amide-bond hydrolysis and racemization), strong reducing agents, and reactive electrophiles such as aldehydes, acyl halides, and alkyl halides. Avoid prolonged exposure to moisture, elevated temperatures, direct sunlight, and UV light, all of which can accelerate degradation of the peptide. Avoid contact with heavy-metal ion contaminants that can catalyze oxidative degradation. No specific incompatibility data for Tesamorelin (CAS 218949-48-5) are listed in OSHA, NIOSH, EPA, ECHA, or PubChem authoritative records; the guidance above reflects general chemistry of peptides of this class.

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

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 acute toxicity data (oral, dermal, or inhalation LD50/LC50) for tesamorelin (CAS 218949-48-5) from authoritative sources such as ECHA, NIOSH, or peer-reviewed literature are available to this compilation. The

substance has not been assigned a harmonized acute toxicity classification. The toxicological profile of tesamorelin as a research/bulk substance is not fully characterized; hazards cannot be excluded. Not classified based on currently available data; treat as a substance of unknown acute toxicity and avoid all routes of exposure (inhalation of dust/aerosol, ingestion, skin and eye contact).

Skin Corrosion / Irritation: No skin corrosion or irritation study data for tesamorelin from ECHA, OECD, or peer-reviewed sources are available to this compilation. Not classified based on currently available data; hazards cannot be excluded. As a synthetic polypeptide of high molecular weight (approximately 5,136 g/mol), dermal absorption of the intact molecule is expected to be limited, but mechanical or drying effects on skin from the solid material have not been characterized. Handle to avoid skin contact.

Serious Eye Damage / Irritation: No serious eye damage or eye irritation study data (e.g., OECD 405/437/438) for tesamorelin from authoritative sources are available to this compilation. Not classified based on currently available data; hazards cannot be excluded. Particulates of any substance may cause mechanical irritation to the eye. Handle to avoid eye contact.

Skin / Respiratory Sensitization: No respiratory or skin sensitization study data (e.g., OECD 429 LLNA, OECD 442 series, or Guinea pig maximization) for tesamorelin from ECHA or peer-reviewed sources are available to this compilation. Not classified based on currently available data; hazards cannot be excluded. Proteins and synthetic polypeptides can, as a class, present a potential for immunologic sensitization upon repeated inhalation or dermal exposure to dust or aerosol; a sensitization hazard for tesamorelin therefore cannot be ruled out and precautionary handling to minimize inhalation and skin contact is warranted.

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: Tesamorelin (CAS 218949-48-5) is not listed as a carcinogen by IARC, the U.S. National Toxicology Program (NTP Report on Carcinogens), OSHA (29 CFR 1910.1200 Subpart Z), or the U.S. EPA IRIS program. No harmonized CLP carcinogenicity classification is listed in the ECHA C&L Inventory. The U.S. FDA-approved prescribing information for tesamorelin (Egrifta/Egrifta SV/Egrifta WR) identifies active malignancy as a contraindication, reflecting product-labeling precaution rather than an authoritative carcinogen classification of the bulk substance. Not classified based on currently available data; long-term carcinogenic potential of the substance is not fully characterized and hazards cannot be excluded.

Reproductive Toxicity: No harmonized CLP reproductive toxicity classification for tesamorelin is listed in the ECHA C&L Inventory, and the substance is not on the California Proposition 65 list for reproductive toxicity. According to the U.S. FDA-approved prescribing information (Egrifta/Egrifta SV/Egrifta WR, accessdata.fda.gov), administration of tesamorelin acetate to rats during organogenesis resulted in hydrocephaly in offspring at systemic exposures approximately two- to four-fold the clinical human exposure based on AUC; the label states use during pregnancy could result in fetal harm. Based on this authoritative regulatory information, potential developmental hazard cannot be excluded. Not classified based on currently available data; handle with precautions appropriate for a substance with potential developmental toxicity, and women who are pregnant or may become pregnant should avoid occupational exposure.

Specific Target Organ Toxicity (STOT): STOT - Single Exposure (STOT-SE): No single-exposure specific target organ toxicity studies for tesamorelin from ECHA or peer-reviewed authoritative sources are available to this compilation. Not classified based on currently available data; hazards cannot be excluded. STOT - Repeated Exposure (STOT-RE): No repeated-dose target organ toxicity data for the bulk substance meeting GHS classification criteria are available to this compilation from ECHA or NIOSH. Not classified based on currently available data; the repeated-exposure toxicological profile of the substance is not fully characterized and hazards cannot be excluded. Occupational exposure should be minimized in accordance with the ACGIH 'as-low-as-reasonably-achievable' principle for pharmaceutically active substances of undefined occupational exposure limits.

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) have been identified for tesamorelin (CAS 218949-48-5) in authoritative sources including PubChem (CID 16137828), ECHA, EPA ECOTOX, or peer-reviewed literature. The substance is a synthetic 44-amino-acid analogue of human growth hormone-releasing hormone with a high molecular weight (5136 g/mol) and is used pharmaceutically at very low subcutaneous doses, limiting expected environmental exposure. Not classified as hazardous to the aquatic environment (acute or chronic) under GHS/CLP based on a weight-of-evidence assessment, as no authoritative experimental data were identified. Release to the environment should nonetheless be avoided.

Persistence and Degradability: No substance-specific ready or inherent biodegradability studies (e.g., OECD 301/302/310) have been identified for tesamorelin in authoritative sources. Given the large peptidic structure containing hydrolytically and proteolytically labile amide (peptide) bonds, degradation via abiotic hydrolysis and microbial proteolysis in environmental compartments is plausible, but no experimental confirmation is available. A definitive persistence classification cannot be assigned in the absence of substance-specific experimental data.

Bioaccumulative Potential: No experimentally determined log Kow, bioconcentration factor (BCF), or bioaccumulation study data have been identified for tesamorelin in PubChem, ECHA, or EPA sources. The compound has a very high molecular weight (5136 g/mol, well above the 500 g/mol threshold often associated with limited membrane permeation) and contains numerous ionizable and hydrophilic functional groups, factors generally associated with low bioaccumulation potential; however, this has not been experimentally verified. Not classified as bioaccumulative in the absence of authoritative experimental data.

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	76e20142-9786-492a-9b28-18adf67bb9aa
Revision Date	2026-09-11
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: 2026-09-11
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).