



SAFETY DATA SHEET

GHS / OSHA HazCom 2012 Compliant

Viking Stack Peptides

AOD 9604

CAS: 221231-10-3

Formula: C78H123N23O23S2

Document ID: 261dd0ec
Revision Date: 2026-09-11
Version: 1.0

Section 1 — Product and Company Identification

Product Name	AOD 9604
Synonyms	AOD 9604; AOD9604; AOD-9604
CAS Number	221231-10-3
PubChem CID	71300630
Molecular Formula	C78H123N23O23S2
IUPAC Name	(2S)-2-[[[2-[[[(4R,7S,13S,16S,19S,22S,25R)-25-[[[(2S)-5-amino-2-[[[(2S)-2-[[[(2S,3S)-2-[[[(2S)-2-[[[(2S)-2-amino-3-(4-hydroxyphenyl)propanoyl]amino]-4-methylpentanoyl]amino]-5-carbamimidamidopentanoyl]amino]-3-methylpentanoyl]amino]-3-methylbutanoyl]amino]-5-oxopentanoyl]amino]-22-(3-carbamimidamidopropyl)-13-(2-carboxyethyl)-7,19-bis(hydroxymethyl)-6,9,12,15,18,21,24-hepta-oxo-16-propan-2-yl-1,2-dithia-5,8,11,14,17,20,23-heptazacyclohexacosane-4-carbonyl]amino]acetyl]amino]-3-phenylpropanoic acid
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
AOD 9604	221231-10-3	C78H123N23O23S2	1815.1 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 AOD 9604 as a potentially bioactive research-use peptide of unknown human toxicity. Use only in areas equipped with appropriate ventilation, ideally a certified chemical fume hood or a ventilated weighing enclosure/-glove box, to minimize the generation and inhalation of dusts, aerosols, and vapors during weighing, transfer, and reconstitution (per OSHA 29 CFR 1910.1200 and the OSHA Laboratory Standard, 29 CFR 1910.1450). Avoid all contact with eyes, skin, and clothing; do not taste, swallow, or inhale. Wear personal protective equipment specified in Section 8 (chemical splash goggles, laboratory coat, and chemical-resistant gloves selected in accordance with ANSI/ISEA 105 and ASTM F739 permeation guidance). Do not eat, drink, smoke, apply cosmetics, or handle contact lenses in areas where the substance is used or stored. Wash hands, forearms, and face thoroughly with soap and water immediately after handling and before breaks and at the end of the workday. Use non-sparking tools and ground/bond containers when transferring the dry solid to control static, since fine organic powders can accumulate electrostatic charge. Minimize exposure to direct light during weighing and dissolution; the tyrosine residue in the sequence is susceptible to photochemical degradation, so work under subdued light and use amber or opaque containers where practical.

Prepare aqueous solutions in sterile, endotoxin-free vehicles, aliquot to avoid repeated freeze-thaw cycles, and keep working quantities to the minimum required. Decontaminate work surfaces, balances, and reusable equipment after use, and collect all contaminated disposables (weigh boats, wipes, pipette tips, vials) as chemical waste in accordance with 40 CFR 262 and applicable local requirements. Provide access to eyewash and safety shower facilities meeting ANSI Z358.1 within the immediate work area.

Storage Conditions

Store the lyophilized solid tightly closed in the original container, protected from light, moisture, and air. Recommended long-term storage of the dry peptide is at -20 °degC or colder in a frost-free/manual-defrost freezer; short-term storage of unopened vials at 2-8 °degC is acceptable prior to use. Keep containers sealed under an inert atmosphere (e.g., dry nitrogen or argon) where feasible and include desiccant, because peptides of this type are hygroscopic and susceptible to hydrolysis and oxidative degradation on exposure to atmospheric moisture and oxygen. Prior to opening a cold vial, allow it to equilibrate to room temperature in a desiccator to prevent condensation of atmospheric water onto the solid. Once reconstituted, store aqueous solutions refrigerated at 2-8 °degC and, for extended storage, aliquot and freeze at -20 °degC or lower to avoid repeated freeze-thaw cycles that degrade peptide integrity. Storage areas should be cool, dry, well-ventilated, secured against unauthorized access, and segregated from foodstuffs, incompatible chemicals (see below), and strong heat or ignition sources. Use secondary containment appropriate for the container type, and label all containers in accordance with OSHA HazCom 2012 (29 CFR 1910.1200(f)). Do not use containers or storage conditions beyond any expiration or re-test date supplied on the certificate of analysis; no specific shelf-life value is established in the source data provided here.

Incompatibilities

Keep separate from strong oxidizing agents, strong acids, and strong bases, which can hydrolyze peptide bonds and oxidatively degrade the tyrosine and disulfide/cysteine-containing residues present in the molecule. The two sulfur atoms in the sequence form a disulfide bridge that is particularly susceptible to strong oxidizers (e.g., peroxides, hypochlorites, permanganates, nitric acid, peroxyacids), reducing agents (e.g., dithiothreitol, beta-mercaptoethanol, tris(2-carboxyethyl)phosphine) that can cleave disulfide bridges, and heavy-metal salts (e.g., Hg(II), Ag(I), Cu(II)) that bind thiols. Avoid contact with electrophilic alkylating and acylating reagents (e.g., iodoacetamide, maleimides, acid chlorides, anhydrides, aldehydes) that can modify amine, thiol, hydroxyl, and guanidino side chains. Protect from prolonged UV/visible light and elevated temperatures, which accelerate photo-oxidation of the tyrosine residue and general thermal degradation. Moisture and atmospheric CO₂ should also be excluded from the dry solid to prevent hydrolysis and salt formation. No hazardous polymerization is expected under normal conditions of storage and use. Refer to Section 10 for additional stability and reactivity information.

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 AOD 9604 (CAS 221231-10-3). 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 well-ventilated laboratory area. Weighing, reconstitution, and any operation capable of generating dusts, aerosols, or mists of the dry peptide or its solutions should be performed inside a certified chemical fume hood, ventilated balance enclosure, Class II biological safety cabinet, or containment/glove-box isolator, consistent with NIOSH guidance for handling pharmaceutical active ingredients of unknown or bioactive toxicity (see NIOSH publication 2023-130, 'Managing Hazardous Drug Exposures'). Maintain sufficient face velocity/inflow on containment devices per manufacturer specification and institutional policy. Provide emergency eyewash and safety shower within the work

area, in accordance with ANSI/ISEA Z358.1. Restrict access to trained personnel. Do not eat, drink, smoke, or apply cosmetics in work areas. Wash hands and exposed skin thoroughly after handling and before leaving the work area. Where the material is handled in closed systems, local exhaust ventilation may not be required, but engineering containment should still be prioritized over reliance on PPE.

Personal Protective Equipment

Respiratory Protection: Under normal laboratory handling of small (mg to sub-gram) quantities within a properly functioning fume hood or biosafety cabinet, additional respiratory protection is generally not required. Where engineering controls are inadequate, where dusts or aerosols may be generated (e.g., weighing dry powder on the open bench, lyophilization, spray-drying), or during spill response, wear a NIOSH-approved particulate respirator meeting at least N95 requirements (42 CFR Part 84); use an elastomeric half- or full-face respirator with P100 cartridges or a powered air-purifying respirator (PAPR) for higher potential exposures. Any respirator use must be part of a written respiratory protection program compliant with OSHA 29 CFR 1910.134, including medical clearance, fit testing, and training.

Hand Protection: Wear chemically resistant, disposable gloves. Nitrile gloves of at least 4 mil (0.10 mm) thickness are recommended for incidental contact; double-gloving is advised when handling the dry powder, when preparing stock solutions, or when working with any solvent (e.g., DMSO, acetic acid, aqueous buffers) that may enhance dermal permeation. Inspect gloves before use for defects; change immediately if torn, punctured, or contaminated. Remove gloves using a technique that avoids skin contact with the outer surface and wash hands thoroughly with soap and water after removal. Glove selection should follow EN ISO 374 / ASTM F739 permeation guidance for the specific solvent system in use.

Eye / Face Protection: Wear tight-fitting chemical safety goggles meeting ANSI/ISEA Z87.1 whenever the material or its solutions are handled outside of primary containment. A face shield worn over goggles is recommended for operations with splash, aerosol, or ejection potential (e.g., vial opening under pressure, sonication, vigorous mixing, dispensing of concentrated stocks). Contact lenses should not be relied upon for eye protection. An ANSI/ISEA Z358.1-compliant emergency eyewash must be immediately accessible.

Skin Protection: Wear a fastened, long-sleeved laboratory coat (a chemotherapy/hazardous-drug-rated disposable gown of low-permeability, low-lint material with closed cuffs is preferred when handling the dry powder or bulk solutions, per NIOSH 2023-130 recommendations), full-length trousers, and closed-toe, non-absorbent footwear. Cover any exposed skin. Use disposable sleeve covers where splash or contamination of forearms is possible. Contaminated PPE and clothing must be removed promptly, segregated for decontamination or disposal as chemical/biohazardous waste, and not taken home or laundered with normal laundry. Do not reuse disposable garments.

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 Kow)	No experimental data available.
Solubility	Soluble in water
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	1815.1 g/mol
Molecular Formula	C78H123N23O23S2

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: Keep separate from strong oxidizing agents, strong acids, and strong bases, which can hydrolyze peptide bonds and oxidatively degrade the tyrosine and disulfide/cysteine-containing residues present in the molecule. The two sulfur atoms in the sequence form a disulfide bridge that is particularly susceptible to strong oxidizers (e.g., peroxides, hypochlorites, permanganates, nitric acid, peroxyacids), reducing agents (e.g., dithiothreitol, beta-mercaptoethanol, tris(2-carboxyethyl)phosphine) that can cleave disulfide bridges, and heavy-metal salts (e.g., Hg(II), Ag(I), Cu(II)) that bind thiols. Avoid contact with electrophilic alkylating and acylating reagents (e.g., iodoacetamide, maleimides, acid chlorides, anhydrides, aldehydes) that can modify amine, thiol, hydroxyl, and guanidino side chains. Protect from prolonged UV/visible light and elevated temperatures, which accelerate photo-oxidation of the tyrosine residue and general thermal degradation. Moisture and atmospheric CO₂ should also be excluded from the dry solid to prevent hydrolysis and salt formation. No hazardous polymerization is expected under normal conditions of storage and use. Refer to Section 10 for additional stability and reactivity information.

Hazardous Decomposition Products: Upon combustion or decomposition may produce: carbon monoxide (CO), carbon dioxide (CO₂), nitrogen oxides (NO_x), sulfur oxides (SO_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: Acute toxicity data for AOD 9604 (CAS 221231-10-3) in humans following occupational (inhalation, dermal, oral) exposure are not fully characterized. No LD₅₀ or LC₅₀ values from authoritative regulatory sources (ECHA, NIOSH, NTP) have been identified for this substance. Non-clinical safety studies summarized in the peer-reviewed literature (Moré et al., Journal of Endocrinology and Metabolism, 2014) reported no significant acute toxicological findings in rodent and porcine studies following oral and intravenous administration; however, these studies were designed to evaluate ingredient safety and do not substitute for a formal occupational acute toxicity classification. Not classified for acute toxicity based on currently available data; hazards cannot be excluded, and the substance should be handled with controls appropriate for a biologically active material of unknown occupational toxicity.

Skin Corrosion / Irritation: No validated in vitro (OECD TG 431/439) or in vivo (OECD TG 404) skin corrosion/irritation data for AOD 9604 have been located in authoritative regulatory databases (ECHA, PubChem). The substance is a high-molecular-weight (1815.1 g/mol) synthetic molecule containing multiple ionizable and hydrogen-bonding

functional groups; dermal irritation potential is not fully characterized. Not classified for skin corrosion or irritation based on currently available data; hazards cannot be excluded. Direct skin contact with the solid or with solutions should be avoided.

Serious Eye Damage / Irritation: No validated eye irritation/serious eye damage data (OECD TG 405, 437, 438, 492, or 496) for AOD 9604 have been identified in authoritative regulatory sources. Mechanical and pH-related ocular irritation cannot be excluded for a fine solid or concentrated aqueous solution. Not classified for serious eye damage or eye irritation based on currently available data; hazards cannot be excluded. Eye contact should be avoided.

Skin / Respiratory Sensitization: No respiratory or skin sensitization studies (OECD TG 406, 429, 442A/B/C/D/E, or human data) for AOD 9604 have been located in authoritative databases (ECHA, NIOSH). As a synthetic high-molecular-weight amino-acid-based molecule (a 16-amino-acid analogue of the human growth hormone C-terminal fragment 177-191 with an N-terminal tyrosine addition), a sensitization hazard from repeated inhalation of dust or dermal exposure cannot be excluded on a weight-of-evidence basis. Not classified for skin or respiratory sensitization based on currently available data; hazards cannot be excluded.

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: AOD 9604 (CAS 221231-10-3) is not listed as a carcinogen by IARC, NTP (Report on Carcinogens), OSHA (29 CFR 1910.1003), ACGIH, or the U.S. EPA IRIS program. No long-term carcinogenicity bioassays conducted according to OECD TG 451/453 have been identified for this substance. Not classified for carcinogenicity based on currently available data; hazards cannot be excluded, and the absence of listing reflects absence of evaluation rather than a demonstration of non-carcinogenicity.

Reproductive Toxicity: No reproductive or developmental toxicity studies conducted to OECD TG 414, 416, 421, 422, or 443 for AOD 9604 have been identified in authoritative regulatory databases (ECHA, EPA, NTP). The substance is not listed on the California Proposition 65 list of chemicals known to cause reproductive toxicity. Reproductive, developmental, and endocrine-mediated toxicity endpoints are not fully characterized. Not classified for reproductive toxicity based on currently available data; hazards cannot be excluded.

Specific Target Organ Toxicity (STOT): Specific target organ toxicity - single exposure (STOT-SE) and repeated exposure (STOT-RE): No occupational studies, human case reports, or repeated-dose animal studies conducted to OECD TG 407/408/410/411/412/413 have been identified in authoritative regulatory databases for AOD 9604 that establish specific target organs of toxicity following inhalation, dermal, or oral occupational exposure. Non-clinical repeat-dose studies referenced in peer-reviewed literature (Moré et al., Journal of Endocrinology and Metabolism, 2014) reported no organ-specific toxicological findings in the species tested, but these studies were not designed to support GHS STOT classification. Not classified for STOT-SE or STOT-RE based on currently available data; hazards cannot be excluded, and the toxicological properties of this substance are not fully characterized.

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 ecotoxicity data (e.g., fish LC50, Daphnia EC50, or algal ErC50) have been identified for AOD 9604 (CAS 221231-10-3) in authoritative sources including PubChem (CID 71300630), the U.S. EPA ECOTOX Knowledgebase, ECHA, or peer-reviewed literature. The substance is not classified as hazardous to the

aquatic environment (acute or chronic) under GHS/CLP based on a weight-of-evidence assessment in the absence of authoritative experimental data. AOD 9604 is a synthetic 16-amino-acid fragment analogue of human growth hormone (hGH 177-191) intended for research/pharmaceutical use and is not expected to be released to the environment in significant quantities under normal laboratory handling. Prevent release to surface waters, groundwater, sewers, and soil.

Persistence and Degradability: No substance-specific experimental biodegradation, hydrolysis, or photolysis data (e.g., OECD 301/310 ready biodegradability studies) have been identified for AOD 9604 in authoritative sources (PubChem CID 71300630, ECHA, U.S. EPA). Because the molecule is a disulfide-containing oligopeptide composed exclusively of proteinogenic alpha-amino-acid residues, it is expected to be susceptible to enzymatic/peptolytic and hydrolytic degradation in biological and environmental matrices; however, this expectation is a qualitative structural inference and is not a substitute for standardized test data. A definitive persistence classification cannot be assigned without experimental confirmation.

Bioaccumulative Potential: No experimentally determined bioconcentration factor (BCF) or n-octanol/water partition coefficient (log Kow) has been identified in authoritative sources (PubChem CID 71300630, ECHA, U.S. EPA) for AOD 9604. Given its high molecular weight (1815.1 g/mol), large polar surface area, multiple ionizable groups, and peptide backbone, significant bioaccumulation in aquatic organisms is not anticipated; however, this is a qualitative structure-based inference only and no authoritative BCF value is available to support a formal GHS bioaccumulation classification.

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	261dd0ec-f8c7-4ad1-9aac-9d7c7a157f64
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).