CJC-1295

CAS: 446262-90-4
Formula: C165H269N47O46

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Version: 1.0

Section 1 — Product and Company Identification

Product Name	CJC-1295
Synonyms	CJC 1295; 62RC32V9N7; DTXSID501027567
CAS Number	446262-90-4
Molecular Formula	C165H269N47O46
IUPAC Name	(3S)-4-[[(2S)-1-[[(2S,3S)-1-[[(2S)-1-[[(2S,3R)-1-[[(2S)-5-amino-1-[[(2S)-1-[[(2S)-1-[[(2S)-1-[[(2S)-6-amino-1-[[(2S)-1-[[(2S)-1-[[(2S)-1-[[(2S)-5-amino-1-[[(2S)-1-[[(2S)-1-[[(2S)-1-[[(2S)-1-[[(2S)-6-amino-1-[[(2S)-1-[[(2S)-1-[[(2S)-5-amino-1-[[(2S)-1-[[(2S,3S)-1-[[(2S)-1-[[(2S)-1-[[(2S)-1-[[(2S)-1-amino-6-[3-(2,5-dioxopyrrol-1-yl)propanoylamino]-1-oxohexan-2-yl]amino]-5-carbamimidamido-1-oxopentan-2-yl]amino]-3-hydroxy-1-oxopropan-2-yl]amino]-4-methyl-1-oxopentan-2-yl]amino]-3-methyl-1-oxopentan-2-yl]amino]-3-carboxy-1-oxopropan-2-yl]amino]-1,5-dioxopentan-2-yl]amino]-4-methyl-1-oxopentan-2-yl]amino]-4-methyl-1-oxopentan-2-yl]amino]-1-oxohexan-2-yl]amino]-5-carbamimidamido-1-oxopentan-2-yl]amino]-1-oxopropan-2-yl]amino]-3-hydroxy-1-oxopropan-2-yl]amino]-4-methyl-1-oxopentan-2-yl]amino]-1,5-dioxopentan-2-yl]amino]-1-oxopropan-2-yl]amino]-4-methyl-1-oxopentan-2-yl]amino]-3-methyl-1-oxobutan-2-yl]amino]-1-oxohexan-2-yl]amino]-5-carbamimidamido-1-oxopentan-2-yl]amino]-3-(4-hydroxyphenyl)-1-oxopropan-2-yl]amino]-3-hydroxy-1-oxopropan-2-yl]amino]-1,5-dioxopentan-2-yl]amino]-3-hydroxy-1-oxobutan-2-yl]amino]-1-oxo-3-phenylpropan-2-yl]amino]-3-methyl-1-oxopentan-2-yl]amino]-1-oxopropan-2-yl… [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	Ruo.bio
Address	30 N Gould St, Sheridan, WY 82801, US
Phone	+1-804-636-6879
Website	https://ruo.bio/
Emergency Phone	+1(804)636-6879 - Monday-Friday: 9:00 AM - 5:00 PM Pacific

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
CJC-1295	446262-90-4	C165H269N47O46	3647.2 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 CJC-1295 (CAS 446262-90-4) only in a controlled laboratory setting by trained personnel, following the requirements of OSHA's Occupational Exposure to Hazardous Chemicals in Laboratories standard (29 CFR 1910.1450) and the Hazard Communication Standard (29 CFR 1910.1200). Because comprehensive toxicological data for this synthetic peptide are not available, treat it as a potentially bioactive substance of unknown toxicity and apply the precautionary principle. Weigh and manipulate the dry, lyophilized powder inside a chemical fume hood, ventilated balance enclosure, or glove box to prevent generation and inhalation of airborne particulates; if local exhaust ventilation cannot be ensured, use a NIOSH-approved particulate respirator selected per 29 CFR 1910.134. Wear chemically resistant nitrile gloves, a buttoned lab coat, and ANSI Z87.1-compliant safety eyewear; add a face shield when handling open containers or during reconstitution. Avoid all skin and eye contact and do not inhale dusts, mists, or aerosols. Prohibit eating, drinking, smoking, and the application of cosmetics in areas where the substance is handled, and wash hands and exposed skin thoroughly with soap and water after handling and before leaving the work area, in accordance with OSHA hygiene practices. Keep containers tightly closed when not in use, and allow sealed vials removed from cold storage to equilibrate to room temperature before opening to minimize moisture uptake by the hygroscopic peptide powder. Use the smallest practical quantities, work over spill trays or absorbent liners, and decontaminate work surfaces and reusable equipment after use. Ground containers when transferring to mitigate static discharge on fine powders. Maintain an accessible eyewash and safety shower in the work area as required by ANSI Z358.1.

Storage Conditions

Store the lyophilized solid in its original tightly closed container, protected from light, moisture, and air, in a cool, dry, well-ventilated area dedicated to research chemicals. Consistent with general guidance for synthetic peptides, long-term storage of the dry powder is recommended at or below -20 degC, with -80 degC preferred for extended storage; desiccated conditions help limit hydrolytic and oxidative degradation of the C165H269N47O46 peptide backbone (MW 3647.2). Allow containers to warm to ambient temperature before opening to prevent condensation. After reconstitution in an appropriate aqueous buffer, store solutions refrigerated at 2-8 degC for short-term use or frozen in single-use aliquots to avoid repeated freeze-thaw cycles, which can promote aggregation, deamidation, and oxidation of peptides. Avoid prolonged exposure to alkaline conditions (pH > 8), elevated temperatures, and direct sunlight or UV light. Keep the storage area secured and access-restricted, segregate from foodstuffs, and store separately from incompatible materials as outlined below and in Section 10. Label all containers in compliance with 29 CFR 1910.1200(f), including date of receipt, date opened, and date of reconstitution. Do not return unused material to the original container.

Incompatibilities

Keep away from strong oxidizing agents (e.g., peroxides, hypochlorites, nitric acid, permanganates, chromates), which can oxidize methionine, cysteine, tryptophan, and other susceptible residues. Avoid contact with strong acids and strong bases, which can catalyze hydrolysis of peptide (amide) bonds and side-chain deamidation; in particular, avoid prolonged exposure to pH > 8. Avoid reducing agents and proteolytic enzymes that could cleave or modify the peptide. Protect from moisture and humid air (the lyophilized powder is hygroscopic), from heat and ignition sources, and from light and UV radiation, all of which can accelerate degradation. Segregate during storage from oxidizers, acids, bases, and flammable solvents in accordance with general OSHA chemical segregation practice under 29 CFR 1910.1200. See 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 CJC-1295 (CAS 446262-90-4). 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 area with local exhaust ventilation sufficient to control airborne concentrations below any applicable limits or to the lowest level reasonably achievable. Weighing, transferring, and manipulation of the dry powder should be performed in a ventilated enclosure such as a certified laboratory fume hood, ventilated balance enclosure, glove box, or Class II biological safety cabinet to minimize generation of aerosols and dust. Reconstituted solutions should be handled to avoid splashes and aerosols. General principles consistent with ISPE Good Practice Guide: Containment for Potent Compounds and the hierarchy of controls in 29 CFR 1910 (substitution, engineering controls, administrative controls, PPE) should be applied. Provide eyewash stations and emergency safety showers in work areas where the substance is handled. Avoid eating, drinking, smoking, or storing food in work areas. Wash thoroughly with soap and water after handling and before breaks.

Personal Protective Equipment

Respiratory Protection: Where engineering controls are adequate (e.g., fume hood, ventilated enclosure), routine respiratory protection is not required. If airborne dust, mist, or aerosol may be generated outside containment, or during weigh-out of the dry peptide powder, use a NIOSH-approved (42 CFR Part 84) particulate respirator such as an N100 or P100 filtering facepiece or half-mask with P100 cartridges. For higher-exposure tasks or unknown airborne concentrations, use a powered air-purifying respirator (PAPR) with HEPA filters or supplied-air respirator. Respirator use must comply with the OSHA Respiratory Protection Standard (29 CFR 1910.134), including fit-testing, medical evaluation, and a written program.

Hand Protection: Wear chemically resistant impermeable gloves consistent with EN 374 / ASTM F739 for protection against laboratory chemicals and biologicals. Nitrile gloves (minimum 0.11 mm thickness) are generally suitable for handling small quantities; double-gloving is recommended when handling the neat powder or concentrated solutions. Inspect gloves before use, change immediately if contamination, degradation, or puncture is suspected, and wash hands thoroughly with soap and water after removal. Glove selection and breakthrough time should be confirmed with the glove manufacturer for the specific task and contact duration.

Eye / Face Protection: Wear tightly fitting safety glasses with side shields meeting ANSI/ISEA Z87.1 as a minimum. Where splashing of solutions is possible, wear chemical splash goggles. Use a face shield (in combination with goggles) when handling larger quantities, transferring solutions, or whenever there is a risk of splash or aerosol to the face. An emergency eyewash station meeting ANSI/ISEA Z358.1 must be readily accessible in the work area.

Skin Protection: Wear a long-sleeved laboratory coat or chemical-resistant protective gown over street clothing, full-length trousers, and closed-toe chemical-resistant footwear. For tasks with higher splash potential or handling of bulk material, add a chemical-resistant apron and disposable sleeve covers. Remove and segregate contaminated clothing immediately; do not take contaminated PPE or clothing out of the work area. Launder reusable garments separately from personal clothing. An emergency safety shower meeting ANSI/ISEA Z358.1 should be accessible in work areas where the substance is handled.

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 and 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	3647.2 g/mol
Molecular Formula	C165H269N47O46

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 away from strong oxidizing agents (e.g., peroxides, hypochlorites, nitric acid, permanganates, chromates), which can oxidize methionine, cysteine, tryptophan, and other susceptible residues. Avoid contact with strong acids and strong bases, which can catalyze hydrolysis of peptide (amide) bonds and side-chain deamidation; in particular, avoid prolonged exposure to pH > 8. Avoid reducing agents and proteolytic enzymes that could cleave or modify the peptide. Protect from moisture and humid air (the lyophilized powder is hygroscopic), from heat and ignition sources, and from light and UV radiation, all of which can accelerate degradation. Segregate during storage from oxidizers, acids, bases, and flammable solvents in accordance with general OSHA chemical segregation practice under 29 CFR 1910.1200. See 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 (NOx).

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 CJC-1295 (CAS 446262-90-4) are not fully characterized. No LD50 or LC50 values from authoritative sources (ECHA, NIOSH, NTP, or peer-reviewed literature) have been identified for the oral, dermal, or inhalation routes. The substance is not listed in the NTP Report on Carcinogens, the IARC Monographs, or the OSHA Annex A list. Not classified for acute toxicity based on currently available data; hazards cannot be excluded, and the material should be handled as if potentially hazardous in accordance with prudent laboratory practice (NRC, Prudent Practices in the Laboratory, 2011).

Skin Corrosion / Irritation: No validated in vivo (OECD TG 404) or in vitro (OECD TG 431/439) skin irritation/-corrosion data for CJC-1295 from authoritative sources have been located. The FDA Pharmacy Compounding Advisory Committee briefing (December 2024) noted injection-site inflammation and necrosis in nonclinical studies of CJC-1295, which suggests local tissue effects following parenteral exposure but does not constitute a validated dermal corrosion/irritation classification. Not classified for skin corrosion/irritation based on currently available data; hazards cannot be excluded. Avoid skin contact.

Serious Eye Damage / Irritation: No validated eye irritation or serious eye damage data (OECD TG 405, 437, 438, 491, 492) for CJC-1295 from authoritative sources have been identified. Not classified for serious eye damage/eye irritation based on currently available data; hazards cannot be excluded. Dust or solution contact with the eyes should be avoided.

Skin / Respiratory Sensitization: No respiratory or skin sensitization data (OECD TG 406, 429, 442A/B/C/D/E) for CJC-1295 from authoritative sources have been located. As a high-molecular-weight (3647.2 g/mol) substance containing multiple amino-acid residues, proteinaceous/polypeptide materials can in principle act as respiratory or dermal sensitizers when inhaled as aerosols or contacted as dust, though no specific sensitization study has been reported for this substance. Not classified for 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: CJC-1295 is not listed by IARC, the U.S. National Toxicology Program (NTP Report on Carcinogens, 15th Edition), OSHA (29 CFR 1910.1003), the U.S. EPA IRIS database, or ACGIH as a carcinogen. No long-term carcinogenicity bioassay has been published for this substance. The FDA Pharmacy Compounding Advisory Committee briefing materials (December 2024) noted that nonclinical findings for CJC-1295 included DNA damage in pituitary cells, indicating that genotoxic potential cannot be ruled out. Not classified for carcinogenicity based on currently available data; hazards cannot be excluded pending further testing.

Reproductive Toxicity: No OECD TG 414 (prenatal developmental toxicity), TG 416/443 (multigeneration/extended one-generation reproductive toxicity), or TG 421/422 (reproduction/developmental toxicity screening) studies for CJC-1295 from authoritative sources have been identified. CJC-1295 is not listed on the California Proposition 65 list of chemicals known to cause reproductive toxicity, nor on the ECHA CMR/SVHC inventories. Not classified for reproductive toxicity based on currently available data; hazards cannot be excluded. As a precaution, exposure should be avoided by pregnant or nursing workers.

Specific Target Organ Toxicity (STOT): Specific Target Organ Toxicity - Single Exposure (STOT-SE): No human or validated animal STOT-SE data for CJC-1295 from authoritative sources have been identified. Not classified for STOT-SE based on currently available data; hazards cannot be excluded. Specific Target Organ Toxicity - Repeated Exposure (STOT-RE): No subchronic (OECD TG 408) or chronic (OECD TG 452) repeated-dose toxicity studies for CJC-1295 from authoritative sources have been published. The FDA Pharmacy Compounding Advisory Committee briefing materials (December 2024) summarized nonclinical findings including reduced hemoglobin and elevated cholesterol following repeated administration of CJC-1295, but these have not been used by any regulatory authority to derive a formal STOT-RE classification. Not classified for STOT-RE based on currently available data; hazards cannot be excluded. Repeated or prolonged exposure should be minimized.

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, algae ErC50) have been identified for CJC-1295 (CAS 446262-90-4) in authoritative sources including PubChem, ECHA, EPA ECOTOX, or peer-reviewed literature. Not classified as hazardous to the aquatic environment (acute or chronic) under GHS based on a weight-of-evidence assessment in the absence of authoritative experimental data. Owing to its very high molecular weight (3647.2 g/mol) and highly polar, ionizable polypeptide structure, significant bioavailability to aquatic organisms is not anticipated, but this has not been experimentally verified. Prevent release of the substance and its solutions to surface waters, groundwater, soil, and sewer/drain systems.

Persistence and Degradability: No substance-specific ready-biodegradability (OECD 301 series) or simulation test (OECD 308/309) data have been identified for CJC-1295 in authoritative regulatory databases or peer-reviewed literature. Definitive persistence (P/vP) classification under GHS or PBT criteria cannot be assigned in the absence of such data. The molecule is a polypeptide composed exclusively of natural L-amino acid residues linked by amide bonds (molecular formula C165H269N47O46, containing only C, H, N, and O), and amide bonds are generally susceptible to enzymatic and abiotic hydrolysis in environmental and biological matrices; however, this read-across has not been confirmed experimentally for CJC-1295 itself.

Bioaccumulative Potential: No experimentally determined log Kow (octanol/water partition coefficient), bioconcentration factor (BCF), or bioaccumulation factor (BAF) for CJC-1295 has been identified in PubChem, ECHA, or peer-reviewed primary sources. The substance is a hydrophilic, high-molecular-weight (3647.2 g/mol) polypeptide containing multiple ionizable groups; molecules of this size and polarity are not typically expected to cross biological membranes by passive diffusion, and a low bioaccumulation potential would be anticipated, but this prediction has not been verified by 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	bfa2ec9d-0f93-4739-b259-b6cc1294a8d6

Revision Date	2026-08-13
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: 2026-08-13
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).