



Lab Rats Collective

IGF1-LR3

CAS: 946870-92-4
Formula: C80H154N4O6S2

Document ID: 25c7788b
Revision Date: 2026-08-03
Version: 1.0

Section 1 — Product and Company Identification

Product Name	IGF1-LR3
Synonyms	946870-92-4; 2-[4-[2-[3-[bis[(9Z,12Z)-2-hydroxyoctadeca-9,12-dienyl]amino]propyl]disulfanyl]ethyl]piperazin-1-yl]ethyl 5-[bis(2-hydroxytetradecyl)amino]pentanoate
CAS Number	946870-92-4
Molecular Formula	C80H154N4O6S2
IUPAC Name	2-[4-[2-[3-[bis(2-hydroxyoctadeca-9,12-dienyl)amino]propyl]disulfanyl]ethyl]piperazin-1-yl]ethyl 5-[bis(2-hydroxytetradecyl)amino]pentanoate
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	Lab Rats Collective
Address	5900 Balcones Dr, Ste 100, Austin, TX 78731, US
Phone	9728370284
Website	https://labratsco.com/
Emergency Contact	CHEMTREC
Emergency Phone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

Section 2 — Hazard Identification

Classification of the substance

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

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

Signal Word: None

GHS Pictograms:

None required based on classification.

Hazard Statements

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

Precautionary Statements

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

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

Hazards Not Otherwise Classified (HNOC)

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

Section 3 — Composition / Information on Ingredients

Single-substance product. Chemical identity:

Ingredient	CAS Number	Mol. Formula	Mol. Weight	Concentration
IGF1-LR3	946870-92-4	C80H154N4O6S2	1332.2 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 OF-Deg-Lin (CAS 946870-92-4) only in a well-ventilated area, preferably within a certified chemical fume hood or equivalent local exhaust ventilation, in accordance with OSHA 29 CFR 1910.1200 and the laboratory standard 29 CFR 1910.1450. Because comprehensive toxicological data for this ionizable amino-lipid are not available, treat it as a potentially hazardous substance of unknown toxicity and apply the precautionary principles in OSHA 1910.1450 Appendix A (Prudent Practices in the Laboratory). Wear chemically resistant nitrile gloves, ANSI Z87.1-compliant safety eyewear (chemical splash goggles), and a buttoned laboratory coat; use a NIOSH-approved particulate respirator (N95 or higher) or an appropriate half-face respirator with organic-vapor/P100 cartridges if aerosols, mists, or dust may be generated during weighing, transfer, or reconstitution. Avoid all skin and eye contact and do not inhale vapors, mists, or aerosols. Do not eat, drink, smoke, or apply cosmetics in areas where the material is handled. Weigh and manipulate the neat solid or concentrated stock solutions on a static-dissipative surface or within a balance enclosure to minimize dispersion of fine particulates. Because the molecule contains a hydrolytically labile ester linkage, a redox-sensitive disulfide bond, tertiary amines, and polyunsaturated (linoleyl) chains that are susceptible to autoxidation, minimize exposure to air, light, moisture, and heat during handling; work under an inert atmosphere

(nitrogen or argon) when practical and aliquot to reduce freeze-thaw cycles. Ground and bond containers when transferring the material in flammable organic solvents (e.g., ethanol, chloroform, DMSO) to prevent electrostatic discharge. Wash hands and exposed skin thoroughly with soap and water immediately after handling and before leaving the work area. Decontaminate work surfaces and reusable equipment after use, and manage all waste as hazardous chemical waste in accordance with 40 CFR 262 and applicable state/local regulations.

Storage Conditions

Store OF-Deg-Lin in tightly closed, chemically compatible containers (amber glass or inert polymer, e.g., PTFE-lined closures) under an inert atmosphere (nitrogen or argon headspace) to protect the polyunsaturated linoleyl chains from autoxidation and to protect the disulfide bond from redox-driven degradation. Protect from light, air, and moisture. For long-term storage the neat solid should be kept at -20 degC or lower (-80 degC is preferred for extended storage); solutions prepared in anhydrous organic solvents such as ethanol, chloroform, or DMSO should also be stored frozen, protected from light, and divided into single-use aliquots to avoid repeated freeze-thaw cycles. Allow sealed containers to warm to room temperature before opening to prevent condensation of atmospheric moisture onto the material. Keep the storage area cool, dry, well-ventilated, and segregated from oxidizers, strong acids and bases, and ignition sources. Clearly label all containers in accordance with OSHA HazCom 2012 (29 CFR 1910.1200(f)) with product identifier, date of receipt, date opened, and applicable hazard information. Restrict access to trained laboratory personnel and store away from food, beverages, and animal feed.

Incompatibilities

Avoid contact with strong oxidizing agents (e.g., peroxides, peracids, hypochlorites, nitric acid, permanganates, chromates), which can oxidatively cleave the disulfide (-S-S-) linkage and initiate peroxidation of the polyunsaturated (9Z,12Z-octadecadienyl / linoleyl) chains. Avoid strong reducing agents (e.g., dithiothreitol, tris(2-carboxyethyl)-phosphine, beta-mercaptoethanol, borohydrides, metal hydrides), which will reduce and cleave the disulfide bond. Avoid strong acids and strong bases, as well as elevated temperatures, which can hydrolyze the ester linkage and protonate/degrade the tertiary amine and piperazine functionalities. Avoid electrophilic alkylating and acylating agents (e.g., acid chlorides, anhydrides, isocyanates, aldehydes), which may react with the secondary hydroxyl groups and tertiary amines. Keep away from transition-metal ions (e.g., Cu²⁺, Fe³⁺) and radical initiators, which catalyze lipid peroxidation of the polyunsaturated chains. Keep away from open flames, sparks, hot surfaces, and other ignition sources, and from incompatible packaging materials that may be attacked by the compound or by solvents used to dissolve it (avoid natural rubber and certain elastomeric seals; use PTFE, HDPE, or inert glass).

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 OF-Deg-Lin (CAS 946870-92-4). 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. Handle within a chemical fume hood, ducted biosafety cabinet, or equivalent local exhaust ventilation (LEV) sufficient to keep airborne concentrations as low as reasonably achievable. When weighing dry powder or working with volumes/quantities that could generate aerosols, use a containment device such as a powder-weighing enclosure, glovebox, or Class II biosafety cabinet. Provide emergency eyewash and safety shower in the immediate work area as specified in ANSI Z358.1. Do not eat, drink, smoke, or store food in areas where this material is used. Wash hands thoroughly after handling. Maintain good industrial hygiene and housekeeping practices consistent with 29 CFR 1910.141.

Personal Protective Equipment

Respiratory Protection: Under normal laboratory handling in an operating fume hood or biosafety cabinet, additional respiratory protection is generally not required. If engineering controls are inadequate, or when handling dry powder outside containment where dust or aerosol generation is possible, use a NIOSH-approved (42 CFR 84) particulate respirator (N95 minimum; N100/P100 or a powered air-purifying respirator [PAPR] with HEPA cartridges for higher exposure potential). Respirator selection, fit-testing, and use must comply with the OSHA Respiratory Protection Standard (29 CFR 1910.134).

Hand Protection: Wear chemical-resistant, impervious gloves compliant with EN ISO 374-1 / ASTM F739. Nitrile gloves (minimum thickness 0.11 mm) are recommended for routine handling; double-gloving is advised when handling neat material or concentrated stock solutions in organic solvents. Inspect gloves before use and replace immediately if punctured, torn, or contaminated. Follow the glove manufacturer's stated breakthrough time for the specific solvent carrier (e.g., ethanol, chloroform, DMSO) in which the lipid is dissolved, since organic solvents may significantly reduce glove protection. Wash hands with soap and water after removing gloves.

Eye / Face Protection: Wear tightly fitting safety goggles meeting ANSI/ISEA Z87.1 (or EN 166 equivalent). A face shield worn over goggles is recommended when there is potential for splash, spray, or aerosol generation, or when handling pressurized/heated solutions. Contact lenses are not a substitute for eye protection.

Skin Protection: Wear a chemical-resistant, long-sleeved laboratory coat or coverall fully buttoned/closed over street clothing. Wear closed-toe, chemical-resistant footwear covering the entire foot. Use disposable sleeve covers and an impervious apron if splashing or bulk handling is anticipated. Remove and launder contaminated clothing before reuse; do not take contaminated garments home. Provide readily accessible emergency shower facilities (ANSI Z358.1) in the work area.

Section 9 — Physical and Chemical Properties

Physical State	Liquid
Appearance	Viscous pale yellow to amber oil/liquid
Odor	Not available.
Odor Threshold	Not available.
Boiling Point	<i>Not determined</i>
Melting Point	<i>Not determined</i>
Flash Point	<i>Not determined</i>
Auto-ignition Temperature	No data available.
Decomposition Temperature	No experimental data available.
Vapor Pressure	<i>Not determined</i>
Vapor Density	<i>Not determined</i>
Specific Gravity	<i>Not determined</i>
Partition Coefficient (log Kow)	No experimental data available.
Solubility	Insoluble in water; soluble in chloroform, dichloromethane, and ethanol
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	<i>Not determined</i>
Molecular Weight	1332.2 g/mol
Molecular Formula	C80H154N4O6S2

Section 10 — Stability and Reactivity

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

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

Incompatible Materials: Avoid contact with strong oxidizing agents (e.g., peroxides, peracids, hypochlorites, nitric acid, permanganates, chromates), which can oxidatively cleave the disulfide (-S-S-) linkage and initiate peroxidation of the polyunsaturated (9Z,12Z-octadecadienyl / linoleyl) chains. Avoid strong reducing agents (e.g., dithiothreitol, tris(2-carboxyethyl)phosphine, beta-mercaptoethanol, borohydrides, metal hydrides), which will reduce and cleave the disulfide bond. Avoid strong acids and strong bases, as well as elevated temperatures, which can hydrolyze the ester linkage and protonate/degrade the tertiary amine and piperazine functionalities. Avoid electrophilic alkylating and acylating agents (e.g., acid chlorides, anhydrides, isocyanates, aldehydes), which may react with the secondary hydroxyl groups and tertiary amines. Keep away from transition-metal ions (e.g., Cu²⁺, Fe³⁺) and radical initiators, which catalyze lipid peroxidation of the polyunsaturated chains. Keep away from open flames, sparks, hot surfaces, and other ignition sources, and from incompatible packaging materials that may be attacked by the compound or by solvents used to dissolve it (avoid natural rubber and certain elastomeric seals; use PTFE, HDPE, or inert glass).

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 specific to OF-Deg-Lin (CAS 946870-92-4) have not been located in authoritative databases (PubChem, ECHA, NIOSH RTECS, NTP). No LD₅₀ or LC₅₀ values from peer-reviewed literature or regulatory bodies are available for the oral, dermal, or inhalation routes. The toxicological properties of this substance are not fully characterized. Not classified based on currently available data; hazards cannot be excluded, and the substance should be handled as if potentially toxic in accordance with laboratory good practice. As a high-molecular-weight (1332.2 g/mol), lipophilic tertiary amine with polyunsaturated (linoleyl) alkyl chains and a disulfide moiety, exposure via inhalation of aerosols/mists and via skin contact should be minimized.

Skin Corrosion / Irritation: No experimental skin corrosion/irritation study on OF-Deg-Lin (CAS 946870-92-4) has been located in ECHA, PubChem, or peer-reviewed literature. The toxicological properties are not fully characterized. Not classified based on currently available data; hazards cannot be excluded. The molecule contains multiple ionizable/-protonatable tertiary amine centers and long-chain lipid substituents typical of surfactant-like cationic lipids, structural features which in analogous cationic lipids have been associated with the potential to disrupt cell membranes; skin irritation therefore cannot be ruled out and direct contact should be avoided.

Serious Eye Damage / Irritation: No experimental eye irritation or serious eye damage study on OF-Deg-Lin (CAS 946870-92-4) has been located in authoritative sources (ECHA, PubChem, peer-reviewed literature). The toxicological properties are not fully characterized. Not classified based on currently available data; hazards cannot be excluded. Given the amphiphilic, cationic lipid nature of the substance, ocular contact with the neat material or concentrated solutions may cause mechanical or surfactant-type irritation and should be prevented through the use of appropriate eye protection.

Skin / Respiratory Sensitization: No respiratory or skin sensitization studies (e.g., LLNA, guinea pig maximization, human repeat-insult patch test) for OF-Deg-Lin (CAS 946870-92-4) have been identified in ECHA, PubChem, or peer-reviewed literature. The toxicological properties are not fully characterized. Not classified based on currently

available data; hazards cannot be excluded. The presence of a disulfide linkage and polyunsaturated (9,12-dienyl) alkyl chains - the latter being susceptible to autoxidation to reactive hydroperoxide and alpha,beta-unsaturated carbonyl species that are recognized structural alerts for skin sensitization in the OECD QSAR Toolbox - warrants precautionary handling to prevent skin contact.

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: OF-Deg-Lin (CAS 946870-92-4) is not listed as a carcinogen by IARC, the U.S. National Toxicology Program (NTP) Report on Carcinogens, OSHA (29 CFR 1910.1003 or the Z-Tables), the U.S. EPA IRIS program, or the ACGIH TLV carcinogen categories. No carcinogenicity bioassays have been located in the peer-reviewed literature. The toxicological properties are not fully characterized. Not classified based on currently available data; hazards cannot be excluded due to the absence of long-term studies.

Reproductive Toxicity: No reproductive, developmental, or fertility toxicity studies for OF-Deg-Lin (CAS 946870-92-4) have been identified in ECHA, PubChem, NTP, or peer-reviewed literature. The substance is not listed on the California Proposition 65 list of chemicals known to cause reproductive toxicity, nor on the ECHA CMR candidate list under REACH. The toxicological properties are not fully characterized. Not classified based on currently available data; hazards cannot be excluded, and exposure of pregnant or nursing workers should be avoided as a precaution.

Specific Target Organ Toxicity (STOT): No specific target organ toxicity data (STOT-SE, single exposure; or STOT-RE, repeated exposure) for OF-Deg-Lin (CAS 946870-92-4) have been located in ECHA, PubChem, NIOSH, or the peer-reviewed literature. No occupational exposure limits (OSHA PEL, NIOSH REL, ACGIH TLV) have been established for this substance. The toxicological properties are not fully characterized. STOT-SE and STOT-RE are not classified based on currently available data; hazards cannot be excluded. In the absence of subchronic or chronic studies, repeated or prolonged exposure by any route should be minimized through engineering controls and appropriate personal protective equipment.

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, algal ErC50) have been identified for OF-Deg-Lin (CAS 946870-92-4) in authoritative databases (ECHA, EPA ECOTOX, PubChem). The substance is a high-molecular-weight (1332.2 g/mol) ionizable amino-lipid containing two long polyunsaturated (linoleyl) chains, tertiary amines, a piperazine core, an ester linkage, and a disulfide bridge; such amphiphilic cationic lipids can associate with negatively charged biological membranes and, by structural analogy, may exhibit toxicity toward aquatic organisms if released in significant quantities. In the absence of authoritative experimental data, the substance is not formally classified as hazardous to the aquatic environment under GHS based on a weight-of-evidence assessment, but release to surface waters, drains, or the environment should nevertheless be avoided as a precautionary measure.

Persistence and Degradability: No substance-specific biodegradation studies (e.g., OECD 301 series ready-biodegradability testing) have been identified for OF-Deg-Lin in authoritative regulatory sources. The molecule contains potentially hydrolyzable and reducible functional groups - an aliphatic ester linkage and a disulfide bond - that may undergo abiotic or enzymatic cleavage under environmentally relevant conditions; however, no experimental half-lives in water, soil, or sediment have been reported. Given the large molecular size, high lipophilicity of the alkyl chains, and

multiple ionizable amine centers, environmental persistence cannot be reliably predicted in the absence of measured data.

Bioaccumulative Potential: No experimentally determined bioconcentration factor (BCF) or measured log Kow value has been identified for OF-Deg-Lin in authoritative sources. The compound has a high molecular weight (1332.2 g/mol), which typically limits transmembrane uptake and bioconcentration potential (molecules with MW > ~700 g/mol generally show reduced BCF, per ECHA REACH guidance R.11). Countervailing factors include the presence of two C18 diunsaturated (linoleyl) chains and two C14 alkyl chains conferring high lipophilicity, offset by four ionizable nitrogen centers and six hydroxyl/ester oxygens that increase hydrophilicity at environmentally relevant pH. Bioaccumulation potential cannot be definitively assessed without substance-specific 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	25c7788b-20c6-4708-829c-7d183ec3f74c
Revision Date	2026-08-03
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: 2026-08-03

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).