



GLP-T

CAS: 223460-79-5
Formula: C165H254N44O55S

Document ID: ac05ba3d
Revision Date: 2026-08-03
Version: 1.0

Section 1 — Product and Company Identification

Product Name	GLP-T
Synonyms	Glucagon-like peptide II; DTXSID50237869; Glucagon Like Peptide 2
CAS Number	223460-79-5
Molecular Formula	C165H254N44O55S
IUPAC Name	(2S)-2-[[[(2S,3R)-2-[[[(2S,3S)-2-[[[(2S)-6-amino-2-[[[(2S,3R)-2-[[[(2S)-5-amino-2-[[[(2S,3S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-4-amino-2-[[[(2S,3S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-4-amino-2-[[[(2S)-2-[[[(2S)-2-[[[(2S,3S)-2-[[[(2S,3R)-2-[[[(2S)-4-amino-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-amino-3-(1H-imidazol-5-yl)propanoyl]amino]propanoyl]amino]-3-carboxypropanoyl]amino]acetyl]amino]-3-hydroxypropanoyl]amino]-3-phenylpropanoyl]amino]-3-hydroxypropanoyl]amino]-3-carboxypropanoyl]amino]-4-carboxybutanoyl]amino]-4-methylsulfanylbutanoyl]amino]-4-oxobutanoyl]amino]-3-hydroxybutanoyl]amino]-3-methylpentanoyl]amino]-4-methylpentanoyl]amino]-3-carboxypropanoyl]amino]-4-oxobutanoyl]amino]-4-methylpentanoyl]amino]propanoyl]amino]propanoyl]amino]-5-carbamimidamidopentanoyl]amino]-3-carboxypropanoyl]amino]-3-phenylpropanoyl]amino]-3-methylpentanoyl]amino]-4-oxobutanoyl]amino]-3-(1H-indol-3-yl)propanoyl]amino]-4-methylpentanoyl]amino]-3-methylpentanoyl]amino]-5-oxopentanoyl]amino]-3-hydroxybutanoyl]amino]hexanoyl]amino]-3-methylpentanoyl]amino]-3-hydroxybutanoyl]amino]butanedioic 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.
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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
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GLP-T	223460-79-5	C165H254N44O55S	3766.1 g/mol	>98% (research grade)
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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 Glucagon-like peptide 2 (CAS 223460-79-5) in accordance with OSHA Hazard Communication Standard (29 CFR 1910.1200) and general good laboratory practice for bioactive research compounds of not-fully-characterized toxicity. Because no occupational exposure limits (OSHA PEL, NIOSH REL, ACGIH TLV) have been established for this peptide, exposures should be controlled to the lowest reasonably achievable level. Work in a well-ventilated area; when weighing or manipulating the dry lyophilized powder, use a chemical fume hood, ventilated balance enclosure, or Class I/II biosafety cabinet to control airborne particulates, since the fine peptide solid can generate a respirable dust. Wear appropriate personal protective equipment as specified in Section 8, including chemical-resistant nitrile gloves, safety eyewear (ANSI Z87.1), and a lab coat; use a NIOSH-approved particulate respirator (e.g., N95 or higher) if engineering controls are insufficient to prevent airborne exposure. Avoid inhalation, ingestion, and skin/eye contact. Do not eat, drink, smoke, or apply cosmetics in areas where the material is handled. Wash hands and exposed skin thoroughly with soap and water after handling and before breaks. Peptides are hygroscopic; allow sealed containers to equilibrate to room temperature in a desiccator before opening to minimize moisture uptake and to reduce electrostatic aerosolization of the powder. Prepare solutions in a manner that minimizes aerosol generation, and decontaminate work surfaces and reusable tools after use. Ground containers and transfer equipment where static discharge could disperse the fine powder. Keep containers tightly closed when not in use and clearly labeled per 29 CFR 1910.1200(f).

Storage Conditions

Store the lyophilized peptide in tightly closed, original container under an inert, dry atmosphere (e.g., argon or nitrogen headspace where feasible) with desiccant, protected from light and moisture. For long-term storage of the dry solid, maintain at -20 degC or, preferably, -80 degC in a dedicated, non-frost-free freezer to minimize freeze-thaw cycles and hydrolytic/oxidative degradation typical of polypeptides. Reconstituted aqueous solutions should be aliquoted to avoid repeated freeze-thaw and stored frozen; short-term working aliquots may be kept refrigerated at 2-8 degC for limited periods consistent with the user's stability data. Allow frozen containers to warm to ambient temperature in a desiccator prior to opening to prevent condensation on the hygroscopic powder. Store away from incompatible materials (see below), heat sources, direct sunlight, and ignition sources. Storage area should be cool, dry, well-ventilated, secured against unauthorized access, and equipped with secondary containment. Ensure storage complies with applicable institutional chemical hygiene plan requirements under 29 CFR 1910.1450 where the material is used in a laboratory setting. Do not store beyond any manufacturer-specified retest or expiration date; the user should verify identity and integrity (e.g., HPLC/MS) prior to use if stored for prolonged periods.

Incompatibilities

Consistent with the general chemistry of polypeptides containing methionine and amide functionalities, avoid contact with strong oxidizing agents (which can oxidize methionine residues), strong acids and strong bases (which can catalyze peptide bond hydrolysis and deamidation of Asn/Gln residues), and proteolytic enzymes or protease--contaminated materials. Avoid prolonged exposure to moisture, heat, direct sunlight, and UV light, which can accelerate hydrolytic, oxidative, and photochemical degradation. Incompatible with sources of ignition when handled as a fine dry powder (organic dusts can present a combustible dust hazard). Store separately from these incompatible chemical classes in accordance with standard laboratory chemical segregation guidance.

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 Glucagon-like peptide 2 (CAS 223460-79-5). No biological exposure indices (BEIs) have been established. Control exposure to the lowest level reasonably achievable (ALARA) using the engineering controls and PPE specified below. Handle as a potentially bioactive substance of unknown toxicity.

Engineering Controls

Use in a well-ventilated area. Handle within a laboratory fume hood, ventilated enclosure, or containment device (e.g., Class II biological safety cabinet or containment ventilated balance enclosure) sufficient to keep airborne concentrations ALARA, consistent with the hierarchy of controls described by NIOSH and OSHA. Where dry powder is weighed or manipulated, use local exhaust ventilation and closed handling systems where feasible to minimize dust or aerosol generation. Provide emergency eyewash and safety shower in the immediate work area in accordance with ANSI/ISEA Z358.1. Prohibit eating, drinking, smoking, and application of cosmetics in areas where the substance is handled. Wash hands and exposed skin thoroughly after handling and before breaks.

Personal Protective Equipment

Respiratory Protection: No regulatory exposure limit exists against which to assess respiratory exposure. If engineering controls do not prevent airborne exposure (e.g., during weighing, dispensing, or handling of dry powder), wear a NIOSH-approved air-purifying respirator equipped with N95 or higher-efficiency particulate filters (42 CFR Part 84). For higher potential exposures or when handling larger quantities, use a NIOSH-approved powered air-purifying respirator (PAPR) with HEPA filters. Respirator use must comply with the OSHA Respiratory Protection Standard (29 CFR 1910.134), including medical clearance, fit testing, and a written respiratory protection program.

Hand Protection: Wear chemically resistant, impervious protective gloves conforming to EN ISO 374 / ASTM D6978. Nitrile gloves are generally suitable for handling small quantities of peptide solutions; double gloving is recommended when handling dry powder or concentrated solutions, consistent with USP <800> and NIOSH guidance for handling drugs of unknown occupational toxicity. Inspect gloves before use, replace immediately if contaminated, torn, or punctured, and wash hands thoroughly after glove removal in accordance with 29 CFR 1910.138.

Eye / Face Protection: Wear tight-fitting safety glasses with side shields or chemical splash goggles meeting ANSI/ISEA Z87.1 (as referenced in 29 CFR 1910.133). Use a full face shield worn over goggles when there is a risk of splash, spray, or generation of airborne particulate. An emergency eyewash station meeting ANSI/ISEA Z358.1 must be readily accessible in the work area.

Skin Protection: Wear a laboratory coat or chemical-resistant long-sleeved gown, closed-toe chemical-resistant footwear, and long trousers to minimize skin contact, consistent with 29 CFR 1910.132. Where handling of powder or potential for splash exists, wear a disposable, low-permeability outer gown or apron (e.g., polyethylene-coated) as recommended by USP <800> for handling drugs of unknown occupational toxicity. Remove and launder or dispose of contaminated clothing before reuse; do not take contaminated PPE outside the work area. Handle as a potentially bioactive substance of unknown toxicity.

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	<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	Soluble in water; soluble in dilute aqueous acetic acid
Stability in Solution	Subject to hydrolytic and oxidative degradation typical of the chemical class; store reconstituted solutions refrigerated or frozen, protect from light, and use within the stability window indicated on the Certificate of Analysis.
pH	<i>Not determined</i>
Molecular Weight	3766.1 g/mol
Molecular Formula	C165H254N44O55S

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: Consistent with the general chemistry of polypeptides containing methionine and amide functionalities, avoid contact with strong oxidizing agents (which can oxidize methionine residues), strong acids and strong bases (which can catalyze peptide bond hydrolysis and deamidation of Asn/Gln residues), and proteolytic enzymes or protease-contaminated materials. Avoid prolonged exposure to moisture, heat, direct sunlight, and UV light, which can accelerate hydrolytic, oxidative, and photochemical degradation. Incompatible with sources of ignition when handled as a fine dry powder (organic dusts can present a combustible dust hazard). Store separately from these incompatible chemical classes in accordance with standard laboratory chemical segregation guidance.

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: No acute toxicity data (oral, dermal, or inhalation LD₅₀/LC₅₀) for glucagon-like peptide 2 (CAS 223460-79-5) have been located in authoritative sources including PubChem, ECHA, NIOSH, or NTP registries. The acute toxicological profile of this 33-amino-acid peptide is not fully characterized. Not classified based on currently available data; hazards cannot be excluded. Handle in accordance with good industrial hygiene practice, avoiding formation and inhalation of dusts, mists, or aerosols.

Skin Corrosion / Irritation: No specific data on skin corrosion or irritation for glucagon-like peptide 2 have been identified in authoritative databases (PubChem, ECHA, NIOSH). The dermal irritation potential is not fully characterized. Not classified based on currently available data; hazards cannot be excluded. Direct skin contact should be avoided as a precaution.

Serious Eye Damage / Irritation: No specific data on serious eye damage or eye irritation for glucagon-like peptide 2 have been identified in authoritative databases (PubChem, ECHA, NIOSH). The ocular irritation potential is not fully

characterized. Not classified based on currently available data; hazards cannot be excluded. Eye contact with the substance, particularly as powder or solution, should be avoided.

Skin / Respiratory Sensitization: No specific data on skin or respiratory sensitization for glucagon-like peptide 2 have been identified in authoritative sources (PubChem, ECHA, NIOSH). As a high-molecular-weight (approximately 3766 g/mol) polypeptide, foreign proteins and peptides as a class have the potential to elicit immunogenic and hypersensitivity responses in exposed workers, particularly following inhalation of aerosolized material, as noted in occupational toxicology literature on protein/peptide manufacturing. Not classified based on currently available data; sensitization hazards cannot be excluded. Avoid inhalation and 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: Glucagon-like peptide 2 (CAS 223460-79-5) is not listed as a carcinogen by IARC, the U.S. National Toxicology Program (NTP Report on Carcinogens), OSHA (29 CFR 1910.1200 Subpart Z), ACGIH, or the EU CLP Annex VI. No long-term carcinogenicity bioassays on this specific substance have been located in authoritative sources. The carcinogenic potential is not fully characterized. Not classified based on currently available data; hazards cannot be excluded.

Reproductive Toxicity: No reproductive, developmental, or fertility toxicity studies for glucagon-like peptide 2 (CAS 223460-79-5) have been located in authoritative databases (ECHA, NTP, EPA, PubChem). The substance is not listed under EU CLP Annex VI or California Proposition 65 for reproductive toxicity. Reproductive and developmental toxicity endpoints are not fully characterized. Not classified based on currently available data; hazards cannot be excluded.

Specific Target Organ Toxicity (STOT): No data are available in authoritative sources (PubChem, ECHA, NIOSH, NTP) identifying specific target organs of toxicity following single (STOT-SE) or repeated (STOT-RE) exposure to glucagon-like peptide 2 (CAS 223460-79-5). Specific target organ toxicity is not fully characterized. Not classified for STOT-SE or STOT-RE based on currently available data; hazards cannot be excluded.

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) were identified for Glucagon-like peptide 2 (CAS 223460-79-5) in authoritative sources including ECHA, EPA ECOTOX, or PubChem. The substance is not listed on the ECHA CLP harmonized classification inventory (Annex VI of Regulation (EC) No 1272/2008) as hazardous to the aquatic environment. Based on a weight-of-evidence assessment, this endogenous 33-amino-acid proglucagon-derived peptide is not classified as hazardous to the aquatic environment; however, releases to surface water, wastewater, or soil should be avoided as a matter of good practice.

Persistence and Degradability: No substance-specific experimental biodegradation studies (e.g., OECD 301 series ready biodegradability tests) were identified in authoritative databases for CAS 223460-79-5. As a naturally occurring peptide composed exclusively of standard L-amino acid residues, environmental hydrolysis and proteolytic degradation by microbial peptidases are anticipated pathways; however, this remains a qualitative expectation and does not substitute for substance-specific test data. No authoritative determination of persistence (P) or very persistent (vP) status under REACH Annex XIII criteria has been identified.

Bioaccumulative Potential: No experimentally determined bioconcentration factor (BCF) or measured log Kow (octanol-water partition coefficient) has been identified for CAS 223460-79-5 in authoritative sources (PubChem, ECHA, EPA). Given the high molecular weight (approximately 3766 g/mol), hydrophilic character, and ionizable multi-residue peptide structure, significant partitioning into lipid tissues is not anticipated, but this qualitative expectation is not supported by substance-specific measured data. The substance has not been identified as bioaccumulative (B) or very bioaccumulative (vB) under REACH Annex XIII by any authoritative body.

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	ac05ba3d-ee10-478d-9da0-af07684c5f59
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).