

Exendin-4 SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product Name: Exendin-4

Catalog Number: P1247

CAS Number: 141758-74-9

IUPAC Name: L-Serinamide, L-histidylglycyl-L- α -glutamylglycyl-L-threonyl-L-phenylalanyl-L-threonyl-L-seryl-L- α -aspartyl-L-leucyl-L-seryl-L-lysyl-L-glutamyl-L-methionyl-L- α -glutamyl-L- α -glutamyl-L-alanyl-L-valyl-L-arginyl-L-leucyl-L-phenylalanyl-L-isoleucyl-L- α -glutamyl-L-tryptophyl-L-leucyl-L-lysyl-L-asparaginyglycylglycyl-L-prolyl-L-seryl-L-serylglycyl-L-alanyl-L-prolyl-L-prolyl-L-prolyl-

1.2 Relevant identified uses and uses advised against

Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.

Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

1.3 Details of the supplier

Company: Selleck Chemicals

TollFree: +1 877 796-6397

Tel: +1 832 582-8158

Fax: +1 832 582-8590

1.4 Emergency telephone number

Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Acute toxicity (oral): Category 4. H302

Carcinogenicity: Category 2. H351

Reproductive toxicity: Category 2. H361

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Warning

Hazard statement(s)

H302: Harmful if swallowed

H351: Suspected of causing cancer

H361: Suspected of damaging fertility or the unborn child

Precautionary statement(s)	None.
Prevention	P203: Obtain, read and follow all safety instructions before use. P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
Response	P301+P317: IF SWALLOWED: Get medical help. P318: if exposed or concerned, get medical advice. P330: Rinse mouth.
Storage	P405: Store locked up.
Disposal	P501: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: Exendin-4

CAS Number: 141758-74-9

PubChem CID: 45588096

Molecular formula: C184H282N50O60S

Molecular weight: 4187 g/mol

IUPAC name: (4S)-5-[[2-[[[(2S,3R)-1-[[[(2S)-1-[[[(2S,3R)-1-[[[(2S)-1-[[[(2S)-1-[[[(2S)-1-[[[(2S)-6-amino-1-[[[(2S)-5-amino-1-[[[(2S)-1-[[[(2S)-1-[[[(2S)-1-[[[(2S)-1-[[[(2S)-1-[[[(2S)-1-[[[(2S)-1-[[[(2S,3S)-1-[[[(2S)-1-[[[(2S)-1-[[[(2S)-1-[[[(2S)-6-amino-1-[[[(2S)-4-amino-1-[[2-[[2-[[[(2S)-2-[[[(2S)-1-[[[(2S)-1-[[2-[[[(2S)-1-[[[(2S)-2-[[[(2S)-2-[[[(2S)-2-[[[(2S)-1-amino-3-hydroxy-1-oxopropan-2-yl]carbamoyl]pyrrolidine-1-carbonyl]pyrrolidine-1-carbonyl]pyrrolidin-1-yl]-1-oxopropan-2-yl]amino]-2-oxoethyl]amino]-3-hydroxy-1-oxopropan-2-yl]amino]-3-hydroxy-1-oxopropan-2-yl]carbamoyl]pyrrolidin-1-yl]-2-oxoethyl]amino]-2-oxoethyl]amino]-1,4-dioxobutan-2-yl]amino]-1-oxohexan-2-yl]amino]-4-methyl-1-oxopentan-2-yl]amino]-3-(1H-indol-3-yl)-1-oxopropan-2-yl]amino]-4-carboxy-1-oxobutan-2-yl]amino]-3-methyl-1-oxopentan-2-yl]amino]-1-oxo-3-phenylpropan-2-yl]amino]-4-methyl-1-oxopentan-2-yl]amino]-5-carbamimidamido-1-oxopentan-2-yl]amino]-3-methyl-1-oxobutan-2-yl]amino]-1-oxopropan-2-yl]amino]-4-carboxy-1-oxobutan-2-yl]amino]-4-carboxy-1-oxobutan-2-yl]amino]-4-carboxy-1-oxobutan-2-yl]amino]-4-methylsulfanyl-1-oxobutan-2-yl]amino]-1,5-dioxopentan-2-yl]amino]-1-oxohexan-2-yl]amino]-3-hydroxy-1-oxopropan-2-yl]amino]-4-methyl-1-oxopentan-2-yl]amino]-3-carboxy-1-oxopropan-2-yl]amino]-3-hydroxy-1-oxopropan-2-yl]amino]-3-hydroxy-1-oxobutan-2-yl]amino]-1-oxo-3-phenylpropan-2-yl]amino]-3-hydroxy-1-oxobutan-2-yl]amino]-2-oxoethyl]amino]-4-[[2-[[[(2S)-2-amino-3-(1H-imidazol-4-yl)propenoyl]amino]acetyl]amino]-5-oxopentanoic acid

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Move to fresh air. Keep at rest in a position comfortable for breathing. Seek medical attention if symptoms persist.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing. Seek medical attention if irritation develops.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting unless directed by medical personnel. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO₂), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

Combustible. Heating may produce toxic fumes.

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

6.3 Methods and materials for containment and cleaning up

SRP: Expired or waste pharmaceuticals shall carefully take into consideration applicable DEA, EPA, and FDA regulations. It is not appropriate to dispose by flushing the pharmaceutical down the toilet or discarding to trash. If possible return the pharmaceutical to the manufacturer for proper disposal being careful to properly label and securely package the material. Alternatively, the waste pharmaceutical shall be labeled, securely packaged and transported by a state licensed medical waste contractor to dispose by burial in a licensed hazardous or toxic waste landfill or incinerator.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Bydureon should be stored in the refrigerator at 36 °F to 46 °F (2 °C to 8 °C), up to the expiration date or until preparing for use. Bydureon should not be used past the expiration date. The expiration date can be found on the carton, on the cover of the single-dose tray, or on the pen label. Do not freeze Bydureon. Do not use Bydureon if it has been frozen. Protect from light. Bydureon single-dose tray can be kept at room temperature not to exceed 77 °F (25 °C).

Prior to first use, Byetta must be stored refrigerated at 36 °F to 46 °F (2 °C to 8 °C). After first use, Byetta can be kept at a temperature not to exceed 77 °F (25 °C). Do not freeze. Do not use Byetta if it has been frozen. Byetta should be protected from light.

7.2 Conditions for safe storage, including any incompatibilities

Bydureon should be stored in the refrigerator at 36 °F to 46 °F (2 °C to 8 °C), up to the expiration date or until preparing for use. Bydureon should not be used past the expiration date. The expiration date can be found on the carton, on the cover of the single-dose tray, or on the pen label. Do not freeze Bydureon. Do not use Bydureon if it has been frozen. Protect from light. Bydureon single-dose tray can be kept at room temperature not to exceed 77 °F (25 °C).

Prior to first use, Byetta must be stored refrigerated at 36 °F to 46 °F (2 °C to 8 °C). After first use, Byetta can be kept at a temperature not to exceed 77 °F (25 °C). Do not freeze. Do not use Byetta if it has been frozen. Byetta should be protected from light.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

8.1.2 Appropriate engineering controls

Use in a well-ventilated area. Chemical fume hood recommended for powder handling.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear safety glasses with side shields.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Respiratory protection usually not required under normal use with adequate ventilation.

Use N95 respirator for large-scale powder handling.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance: White to off-white powder
- b) Odor: No data available
- c) Odor threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: No data available
- f) Initial boiling point and boiling range: No data available
- g) Flash point: No data available
- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: No data available
- l) Vapor density: No data available
- m) Relative density: No data available
- n) Water solubility: Soluble in DMSO; slightly soluble in water
- o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): -21
- p) Auto-ignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2 Other information

Topological Polar Surface Area (TPSA): 1780 Å²
Complexity: 10300

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.
Avoid strong oxidizing agents, strong acids, and strong bases.

10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong bases.

10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Sulfur oxides (SO_x).

See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

No acute toxicity data available.

Skin corrosion/irritation:

No data available.

Serious eye damage/eye irritation:

No data available.

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

No data available.

Carcinogenicity:

Suspected of causing cancer (H351).

Reproductive toxicity:

Suspected of damaging fertility or the unborn child (H361).

Specific target organ toxicity (single exposure):

No data available.

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

No additional toxicological information available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Exenatide is derived from the bioactive peptides isolated from the venom of *Heloderma suspectum* (Gila monster) and *H. horridum* (Mexican beaded lizard)(1). Both are from the Family: Helodermatidae(2). /Exendins/

Peptide or protein degradation often occurs when water flows into the dosage form. The aim of this study was to investigate the effect of water on exenatide acylation in poly(lactide-co-glycolide) (PLGA) microspheres.

Exenatide-loaded PLGA microspheres were incubated at different relative humidities (RH) as well as in solutions of different pH for 20 days. The stability of exenatide was monitored using HPLC and HPLC-MS analysis. The alteration of exenatide conformation caused by water was investigated by FT-IR spectroscopy. Exenatide and glycolide were incubated in DMSO-water solutions to verify the effect of exenatide conformation state on the peptide acylation. Exenatide was relatively stable in microspheres at lower RH, and the absorbed water could act as a

plasticizer and thus promote the peptide acylation by PLGA. However, when the microspheres were incubated at 100% RH, the excessively absorbed water could cause conformation recovery of exenatide and play an inhibitory effect on acylation. The formation of acylated exenatide incubated in acetate buffer saline of pH 6.0 was more than that of pH 4.5 and 3.0. Stability studies of exenatide in glycolide solutions showed that exenatide in nonnative monomer state was easier to be acylated by electrophiles than that in a

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Log P (n-octanol/water): -21

Low potential for bioaccumulation (Log P < 3).

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

No other adverse ecological effects identified.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as dangerous goods (research quantities typically exempt).

14.2 UN proper shipping name

Not subject to transport regulations (small quantities for research use).

14.3 Transport hazard class(es)

Not classified as dangerous goods for transport (research quantities).

14.4 Packing group

Not applicable (not regulated as dangerous goods in typical research quantities).

14.5 Environmental hazards

Marine pollutant: No (not classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

US EPA / TSCA: Not available in public databases.

EU ECHA / REACH: Not available in public databases.

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Acute (short-term) health hazard

Chronic (long-term) health hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Other regulatory listings:

- FDA Requirements: The Approved Drug Products with Therapeutic Equivalence Evaluations identifies currently marketed prescription drug products, including exenatide synthetic, approved on the basis of safety and effectiveness by FDA under sections 505 of the Federal Food, Drug, and Cosmetic Act.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/15

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or

contact with the product.