UK PEPTIDES

Safety Data Sheet

According to Regulation (EC) No 1907/2006 (REACH)
and Regulation (EC) No 1272/2008 (CLP) as retained in UK law

Date of issue: 2026-05-27 · **Last reviewed:** 2026-07-01 · **Next review due:** 2026-09-29 · **Version:** 1.0

Trade name	Thymosin Beta 4 2mg (TB500)	**CAS Number**	77591-33-4
Chemical name	Thymosin Beta 4 2mg	**Molecular formula**	C212H350N56O78S
Catalogue №	TB500-2mg	**Molecular weight**	4963.4 g/mol
Pack size	2.0 mg	**Physical form**	Lyophilised Solid

1. Identification

Trade name	Thymosin Beta 4 2mg (TB500)
Chemical name	Thymosin Beta 4 2mg
Synonyms	
IUPAC name	4-[[2-[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[1-[2-[[1-[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[2-[[1-[2-[[2-[(2-acetamido-3-hydroxypropanoyl)amino]-3-carboxypropanoyl]amino]-6-aminohexanoyl]pyrrolidine-2-carbonyl]amino]-3-carboxypropanoyl]amino]-4-methylsulfanylbutanoyl]amino]propanoylamino]-4-carboxybutanoyl]amino]-3-methylpentanoyl]amino]-4-carboxybutanoyl]amino]-6-aminohexanoyl]amino]-3-phenylpropanoyl]amino]-3-carboxypropanoyl]amino]-6-aminohexanoyl]amino]-3-hydroxypropanoyl]amino]-6-aminohexanoyl]amino]-4-methylpentanoyl]amino]-6-aminohexanoyl]amino]-6-aminohexanoyl]amino]-3-hydroxybutanoyl]amino]-4-carboxybutanoyl]amino]-3-hydroxybutanoyl]amino]-5-amino-5-oxopentanoyl]amino]-4-carboxybutanoyl]amino]-6-aminohexanoyl]amino]-4-amino-4-oxobutanoyl]pyrrolidine-2-carbonyl]amino]-4-methylpentanoyl]pyrrolidine-2-carbonyl]amino]-3-hydroxypropanoyl]amino]-6-aminohexanoyl]amino]-4-carboxybutanoyl]amino]-3-hydroxybutanoyl]amino]-3-methylpentanoyl]amino]-4-carboxybutanoyl]amino]-5-amino-5-oxopentanoyl]amino]-4-carboxybutanoyl]amino]-6-aminohexanoyl]amino]-5-amino-5-oxopentanoyl]amino]propanoylamino]acetyl]amino]-5-[(1-carboxy-2-hydroxyethyl)amino]-5-oxopentanoic acid
Sequence (one-letter)	SDKPDMAEIEKFDKSKLKKTETQEKNPLPSKETIEQEKQAGES
Sequence (three-letter)	SDKPDMAEIEKFDKSKLKKTETQEKNPLPSKETIEQEKQAGES
CAS Number (acetate)	77591-33-4
CAS Number (free acid)	(for cross-reference)
Molecular formula	C212H350N56O78S
Molecular weight	4963.4 g/mol (acetate); 4963.0 g/mol (free acid)
Purity	≥ 98% (HPLC)
Catalogue number	TB500-2mg

1.2 Relevant identified uses of the substance and uses advised against

For research use only (in vitro). Not for human or veterinary use, including diagnostic, therapeutic, prophylactic or in vivo administration of any kind. Not for use in or as a food, drug, medical device, cosmetic, household product, or any other commercial application.

1.3 Details of the supplier of the Safety Data Sheet

Supplier	UK Peptides
Address	409 Linthorpe Road, Middlesbrough TS5 6JN, United Kingdom
Email	sales@uk-peptides.com
Website	https://www.uk-peptides.com
Business hours	Mon–Fri 10:30 – 16:00 GMT/BST

1.4 Emergency telephone number

United Kingdom	Emergency: **999** · Non-emergency: **111 (NHS — UK)**

Healthcare professionals	Healthcare professionals can access the UK National Poisons Information Service (NPIS) via TOXBASE (www.toxbase.org) or by calling 0344 892 0111.
Supplier (business hours)	sales@uk-peptides.com (Mon–Fri 10:30 – 16:00 GMT/BST)

2. Hazard(s) identification

2.1 Classification of the substance or mixture

Not classified as hazardous under UK CLP (Regulation (EC) No 1272/2008 as retained).

2.2 Label elements

Hazard pictograms	None
Signal word	None
Hazard statements (H-codes)	None
Precautionary statements (P-codes)	None

2.3 Other hazards

PBT / vPvB assessment	Not applicable. The substance has not been assessed as Persistent, Bioaccumulative and Toxic (PBT) or very Persistent and very Bioaccumulative (vPvB).

No other hazards known under conditions of normal handling. As a research-use-only substance with limited published toxicological data, handle with the precautions appropriate to a substance of unknown toxicity.

3. Composition / information on ingredients

Substance type: Substance (single component)

Component	CAS №	EC №	Concentration
Thymosin Beta 4 2mg	77591-33-4	Not assigned	>98 (purity by HPLC)

4. First-aid measures

4.1 Description of first-aid measures

General	If symptoms occur or persist, consult a doctor and present this Safety Data Sheet.
Inhalation	Move to fresh air. If breathing is difficult, obtain medical attention.
Skin contact	Wash affected area with soap and plenty of water. Remove contaminated clothing. Seek medical attention if irritation persists.
Eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present and easy to do — continue rinsing. Seek medical attention.
Ingestion	Do not induce vomiting. Rinse mouth. Do not give anything by mouth to an unconscious person. Seek medical attention immediately and present this Safety Data Sheet.

4.2 Most important symptoms and effects, acute and delayed

No specific symptoms known. As a research compound with limited toxicological characterisation, observe casualty for delayed effects.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. No specific antidote known.

5. Fire-fighting measures

Suitable extinguishing media	Use extinguishing media appropriate to surrounding fire. Suitable media include dry chemical powder, carbon dioxide (CO_2), foam, or water spray.
Unsuitable extinguishing media	None known.
Specific hazards from substance	Combustion may produce carbon oxides (CO, CO_2), nitrogen oxides (NO_x) and other irritant or toxic fumes.
Advice for firefighters	Self-contained breathing apparatus and full protective clothing for firefighters.

6. Accidental release measures

Personal precautions	Wear appropriate personal protective equipment (see section 8). Avoid generation and inhalation of dust. Avoid contact with skin and eyes.
Environmental precautions	Do not allow to enter drains, sewers, or watercourses.
Containment	Collect spilled material into a sealable, labelled container. Avoid dust generation.
Cleaning up	After collection, wash the spill area with water. Dispose of waste in accordance with section 13.

7. Handling and storage

7.1 Precautions for safe handling

Handle only in a properly ventilated laboratory by trained personnel. Avoid formation of dust and aerosols. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Store the unopened, lyophilised product at -20 °C, protected from light and moisture, in the original sealed container. Prepared solutions should be stored according to validated laboratory procedures.

Incompatibilities	Strong oxidising agents, strong acids and strong bases. Avoid prolonged exposure to atmospheric moisture (hygroscopic).

7.3 Specific end uses

For research use only (in vitro). See section 1.2.

8. Exposure controls / personal protection

8.1 Control parameters

No occupational exposure limits (WELs, OELs, TLVs) have been established for this substance.

8.2 Exposure controls

Engineering controls	Use in a fume hood or other local exhaust ventilation when handling powder. Eyewash and safety shower should be readily accessible in work area.
Respiratory protection	If handling produces dust or aerosol exceeding acceptable levels, wear an approved respirator (FFP2 or higher per EN 149).
Hand protection	Disposable nitrile or latex laboratory gloves (EN 374). Replace immediately if contaminated.
Eye / face protection	Safety glasses with side shields or chemical splash goggles (EN 166).
Skin and body protection	Standard laboratory coat, closed-toe footwear.
Hygiene measures	Wash hands and any exposed skin thoroughly after handling. Do not eat, drink, smoke or apply cosmetics in the work area.

9. Physical and chemical properties

Appearance	Solid
Colour	White to off-white
Odour	Odourless to faint characteristic odour
Odour threshold	Not determined
pH	Not determined
Melting point / freezing point	Not determined
Initial boiling point / range	Not applicable (decomposes before boiling)
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not classified as flammable
Upper explosive limit	Not determined
Lower explosive limit	Not determined
Vapour pressure	Not applicable (non-volatile solid)
Vapour density	Not applicable
Relative density	Not determined
Solubility in water	Soluble in water
Solubility in other solvents	Soluble in DMSO; sparingly soluble in ethanol
Partition coefficient (n-octanol / water)	Not determined
Auto-ignition temperature	Not determined
Decomposition temperature	Not determined
Viscosity	Not applicable
Explosive properties	Not classified as explosive
Oxidising properties	Not classified as oxidising

10. Stability and reactivity

Reactivity	No specific reactivity hazards known under recommended storage and handling conditions.
Chemical stability	Stable in the lyophilised form under recommended storage conditions (-20 °C, sealed, protected from light and moisture).
Possibility of hazardous reactions	No hazardous polymerisation. No hazardous reactions known under recommended conditions.
Conditions to avoid	Heat, light, moisture, freeze-thaw cycles when reconstituted.
Incompatible materials	Strong oxidising agents, strong acids, strong bases.
Hazardous decomposition products	Thermal decomposition may yield carbon oxides (CO_x), nitrogen oxides (NO_x) and other irritant / toxic fumes.

11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity (LD_{50})	No data available
Acute dermal toxicity (LD_{50})	No data available
Acute inhalation toxicity (LC_{50})	No data available
Skin corrosion / irritation	Not classified. No data available.
Serious eye damage / irritation	Not classified. No data available.
Respiratory sensitisation	Not classified. No data available.
Skin sensitisation	Not classified. No data available.
Germ cell mutagenicity	Not classified. No data available.
Carcinogenicity	Not listed by IARC, NTP, ACGIH or under UK CLP Annex VI (carcinogen categories 1A/1B/2).
Reproductive toxicity	Not classified. No data available.
STOT — single exposure	Not classified. No data available.
STOT — repeated exposure	Not classified. No data available.
Aspiration hazard	Not classified. No data available.

No specific toxicological data is available for this substance. Limited toxicological data is available and the precautionary principle should be applied.

12. Ecological information

Aquatic toxicity	No data available
Persistence / degradability	No data available. As a peptide composed of natural amino acids, biodegradation is expected.
Bioaccumulative potential	Low bioaccumulation potential expected (high water solubility, peptide bond hydrolysis).
Mobility in soil	No data available
PBT / vPvB assessment	Not assessed.
Other adverse effects	Do not allow undiluted product or large quantities to enter ground water, watercourses or sewage systems.

13. Disposal considerations

13.1 Waste treatment methods

Product waste	Dispose of contents and container in accordance with UK Environmental Protection Act 1990, Hazardous Waste (England and Wales) Regulations 2005 (as amended), and any other relevant national, regional and local legislation. Consult a licensed waste disposal contractor.
Contaminated packaging	Empty containers should be disposed of in line with local regulations. Do not reuse empty containers.
EWC waste code	Not assigned by the supplier. The end user must allocate a List of Wastes (LoW) code — formerly European Waste Catalogue (EWC) — appropriate to the specific use and waste stream.

14. Transport information

Mode	UN №	Proper shipping name	Hazard class	Packing group
ADR (road)	Not regulated	Not regulated	Not regulated	Not regulated
RID (rail)	Not regulated	Not regulated	Not regulated	Not regulated
IMDG (sea)	Not regulated	Not regulated	Not regulated	Not regulated
IATA / ICAO (air)	Not regulated	Not regulated	Not regulated	Not regulated

Environmental hazards Not applicable
Special precautions for user None
Transport in bulk (MARPOL) Not applicable — substance is not transported in bulk

15. Regulatory information

UK REACH

UK REACH — Regulation (EC) No 1907/2006 as it applies in Great Britain by virtue of the REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 (SI 2019/758), as amended. This substance is not listed on the UK REACH Candidate List of Substances of Very High Concern (SVHC) and is not subject to authorisation under UK REACH Annex XIV.

UK CLP

UK CLP — Regulation (EC) No 1272/2008 as it applies in Great Britain by virtue of the CLP etc. (Amendment etc.) (EU Exit) Regulations 2019 (SI 2019/720), as amended. The substance does not have a harmonised classification under UK CLP Annex VI and is not classified by the supplier as hazardous.

MHRA

This product is not authorised as a medicinal product by the UK Medicines and Healthcare products Regulatory Agency (MHRA) under the Human Medicines Regulations 2012. Any supply, marketing, or use must comply with applicable UK legislation, including the Human Medicines Regulations 2012. This product is supplied solely as a chemical reagent for in vitro research.

Other UK legislation

Poisons Act 1972 Not listed under the Poisons Act 1972 (as amended).
Misuse of Drugs Act 1971 Not listed under the Misuse of Drugs Act 1971 or Misuse of Drugs Regulations 2001.

Chemical safety assessment

A Chemical Safety Assessment under UK REACH has not been carried out by the supplier.

16. Other information

Date of issue	2026-05-27
Revision date	2026-05-27
Last reviewed	2026-07-01
Next review due	2026-09-29
Version	1.0
Prepared by	UK Peptides Compliance Team

Review history

Date	Reviewed by	Outcome
2026-05-27	UK Peptides Compliance Team	Initial issue
2026-07-01	UK Peptides Compliance Team	Quarterly review — no changes required

Abbreviations and acronyms

- CAS — Chemical Abstracts Service
- CLP — Classification, Labelling and Packaging Regulation (EC 1272/2008)
- ECHA — European Chemicals Agency
- GHS — Globally Harmonised System of Classification and Labelling of Chemicals
- IATA — International Air Transport Association
- IARC — International Agency for Research on Cancer
- IMDG — International Maritime Code for Dangerous Goods
- LoW — List of Wastes (UK; formerly European Waste Catalogue)
- MHRA — Medicines and Healthcare products Regulatory Agency (UK)
- NPIS — National Poisons Information Service (UK)
- NTP — National Toxicology Program (USA)
- OEL — Occupational Exposure Limit
- PBT — Persistent, Bioaccumulative and Toxic
- PPE — Personal Protective Equipment
- REACH — Registration, Evaluation, Authorisation and Restriction of Chemicals (EC 1907/2006)
- SDS — Safety Data Sheet
- STOT-SE — Specific Target Organ Toxicity, Single Exposure
- STOT-RE — Specific Target Organ Toxicity, Repeated Exposure
- SVHC — Substance of Very High Concern
- vPvB — very Persistent and very Bioaccumulative
- WEL — Workplace Exposure Limit

References

- ECHA Classification & Labelling Inventory — substance not listed as classified
- PubChem (NCBI) — chemical identity database (CAS, molecular formula, IUPAC name)
- Regulation (EC) No 1907/2006 (REACH) as retained in UK law
- Regulation (EC) No 1272/2008 (CLP) as retained in UK law
- UK MHRA — Human Medicines Regulations 2012

The information in this Safety Data Sheet is provided in good faith and is believed to be correct as of the date of issue. UK Peptides makes no warranty, express or implied, regarding the accuracy of this data or the results to be obtained from its use. This product is supplied for research use only (in vitro). The user assumes all responsibility for the safe use, handling, storage and disposal of the product, and for compliance with all applicable laws and regulations. This SDS does not constitute a quality specification — quality data is supplied separately on the Certificate of Analysis.

This document is provided for occupational safety and transport reference purposes only and does not constitute product approval, authorisation, or suitability for any specific application.