



Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 03.06.2026 Date of compilation: 03.06.2026

Trade name: TB-500

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: TB-500

Chemical name: Thymosin beta-4

CAS number: 77591-33-4

EINECS Number: -

Index number: -

Registration number: Registration number for this substance has not yet been assigned or the substance is manufactured / imported in a volume that does not require its registration.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product category: SU24 Scientific research and development

Application of the substance / mixture: Raw material for research and development.

(see more labels, or product / data sheet)

Not recommended uses: All except above mentioned uses.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Mažoji bendrija "Apex Pure"

Vilnius, V. Nagevičiaus g. 3,

LT-08237

Lithuania

E-mail: info@appeptides.com

1.4 Emergency telephone number

Poisons Centres in Europe (consultation in case of acute intoxication):

<http://www.eapcct.org/index.php?page=links>

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The substance is not classified, according to the CLP regulation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008: Void

Hazard pictograms: Void

Signal word: Void

Hazard statements: Void

Precautionary statements:

Additional information: EUH210 Safety data sheet available on request.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT / vPvB

According to the information available, the product does not meet criteria such as PBT (persistent, bioaccumulative and toxic) or as vPvB (very persistent, very bioaccumulative) in accordance with Annex XIII of REACH (substance on its own or in a mixture).

Determination of endocrine-disrupting properties

According to the information available, the product does not meet the criteria for having endocrine disrupting properties (substance on its own or in a mixture).

SECTION 3: Composition/information on ingredients**3.1 Substances****Substances:**

CAS No. Description	Substance	Additional information
CAS: 77591-33-4 Thymosin beta-4	TB-500	Sequence: Ac-Ser-Asp-Lys-Pro-Asp-Met-Ala-Glu-Ile-Glu-Lys-Phe-Asp-Lys-Ser-Lys-Leu-Lys-Lys-Thr-Glu-ThrGln-Glu-Lys-Asn-Pro-Leu-Pro-Ser-Lys-Glu-Thr-Ile-Glu-Gln-Glu-Lys-Gln-Ala-Gly-Glu Formula: $C_{212}H_{350}N_{56}O_{76}S$ Molecular weight: 4963.5 g / mol

SECTION 4: First aid measures**4.1 Description of first aid measures****General information:**

Remove contaminated clothing and shoes (use of personal protective equipment, see section 8). In case of any uncertainty or if any symptoms occur, seek medical assistance and show this SDS or label. Protect your health. Information for doctor: treatment is symptomatic.

After inhalation:

Ensure of fresh air. In the event of symptoms refer for medical treatment.

After skin contact:

In case of contact with skin wash off with soap and water. Remove contaminated clothing. Seek medical help if necessary.

After eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical help if necessary

After swallowing:

If swallowed by mistake wash out with plenty of water. Do not induce vomiting. Call doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available (for more see sections 2 and 11).

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

Carbon dioxide, dry extinguisher, alcohol resistant foam (large fire). Cool container at risk with water jet spray.

Fire-extinguishing activities according to surrounding

For safety reasons unsuitable extinguishing agents: Not determined.

5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

Carbon dioxide (CO₂).

Carbon monoxide (CO).

Nitrogen oxides (NO_x)

Sulphur oxides (SO_x).

5.3 Advice for firefighters**Protective equipment:**

Do not stay in dangerous zone without self-contained breathing apparatus. Use chemical overall and equipment.

Additional information:

Cool container with spray water from a safe distance. Contain escaping vapours with water. Prevent firefighting water from entering surface water or groundwater.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel:**

Do not inhale vapours/aerosols. Ensure supply of fresh air in enclosed rooms. Avoid contact with eyes and skin.

6.1.2. For emergency responders:

More info in section 5.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater

6.3 Methods and material for containment and cleaning up

Spilled product mechanically collect and then place in suitable containers. Follow disposal is governed by regulations set out in section 13, watch the value in section 8. The affected area and used tools thoroughly wash with suitable detergent, do not use solvents.

6.4 Reference to other sections

See section 7 for information on safe handling. See section 8 for information on personal protective equipment. See section 13 for information on safe disposal.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Before the usage check out sections 2, 6, 8 and 11. Don't breathe aerosol/dust. Eating, drinking, smoking as well as food storage, is prohibited in work room.

Information about fire and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by storerooms and receptacles:**

Store in a dry place. Protect against water and moisture. Store only in the original properly sealed and marked containers. Store in accordance with the requirements stated on the label / in the technical specification from the manufacturer / supplier.

Store in closed containers at temperatures:

-18 ° C for 3 years

0 - 7 ° C for 1 year

7 - 30 ° C for half a year

Information about storage in one common storage facility:

- Store away from foodstuffs.
- Do not store with incompatible materials (see section 10).

Further information about storage conditions: None.

7.3 Specific end use(s)

Right usage of product is enclosed in product documentation or on label.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

General maximum dust: 10 mg / m³ for respirable dust. See local regulations.

8.2 Exposure controls

8.2.1 Appropriate engineering controls:

The usual precautionary measures are to be adhered to when handling chemicals.

8.2.2 Individual protection measures, such as personal protective equipment:

Respiratory protection:



Normally not needed. In case of insufficient ventilation, the creation of dust and excess of permitted exposure limits use appropriate respiratory mask with filter against solid aerosols. Filter P (EN 14387).

Skin protection / Hand protection:



Protective gloves (EN 374).

Material:

Nitrile rubber, NBR (EN 374).

Recommended thickness of the material: 0.4 mm

Penetration time of glove material: ≥ 480 min (EN 16523-1).

Glove material must be impermeable and resistant against product / substance / preparation. Gloves material should comply with breakthrough times, permeation rates, and degradation. Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye/face protection:



Wear closely fitting protective glasses with side protection (EN 166) in case of splashes.

Skin protection / Other:



Protective clothing with long sleeves (EN ISO 6529) and safety shoes (EN ISO 20345, EN ISO 20346, or EN ISO 20347).

Thermal hazards: Void.

8.2.3 Environmental exposure controls:

Close the packaging properly after and during the work. Store containers stably. Avoid tipping over unsecured packaging. Clean contaminated packaging from contaminant.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid powder
Colour	White powder
Odour	No further relevant information available.
Odour threshold	Not determined.
Melting point/freezing point	Undetermined.
Boiling point or initial boiling point and boiling range	Undetermined.
Flammability	The product is not flammable.
Lower explosion limit	Not determined.
Upper explosion limit	Not determined.

Flash point	Not applicable.
Auto-ignition temperature	Not determined.
Decomposition temperature	230 °C
pH	Not applicable.
Kinematic viscosity	Not determined.
Dynamic viscosity	Not determined.
Solubility in water	Soluble
Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure	Not applicable.
Absolute density	Not determined.
Relative vapour density	Not applicable.
Particle characteristics	See item 3.

9.2 Other information

Explosive properties: Product does not present an explosion hazard.

VOC (EC): Not determined.

Change in condition

Evaporation rate: Not applicable.

Information with regard to physical hazard classes:

Explosives: Void

Flammable gases: Void

Aerosols: Void

Oxidising gases: Void

Gases under pressure: Void

Flammable liquids: Void

Flammable solids: Void

Self-reactive substances and mixtures: Void

Pyrophoric liquids: Void

Pyrophoric solids: Void

Self-heating substances and mixtures: Void

Substances and mixtures emitting flammable gases in contact with water: Void

Oxidising liquids: Void

Oxidising solids: Void

Organic peroxides: Void

Corrosive to metals: Void

Desensitised explosives: Void

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: See section 7.

10.3 Possibility of hazardous reactions

No dangerous reactions known.

10.4 Conditions to avoid

No further relevant information available.

10.5 Incompatible materials Oxidising agent.

10.6 Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Primary irritant effect :

Acute toxicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met. Longer contact may cause irritation of the skin and possibly dermatitis (skin inflammation). The product degreases and dries the skin
Serious eye damage/irritation	Based on available data, the classification criteria are not met. Dust can cause mechanical eye irritation
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met. Sensitisation possible through skin contact.
STOT-single exposure	Based on available data, the classification criteria are not met. Inhalation of dust can cause irritation of the respiratory tract.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

LD/LC50 values relevant for classification:

Caution! To the best of our knowledge the toxicological properties of this material have not been thoroughly investigated.

Ingestion response:

Ingestion: abdominal discomfort and other negative effects (sickness, nausea etc.). The effects may be immediate, or even later

Mixtures / mixture versus substance information: Not applicable. It is a substance.

Information on likely routes of exposure: See the above information in section 11.

Symptoms related to the physical, chemical and toxicological characteristics: See the above information in section 11.

Delayed and immediate effects as well as chronic effects from short and long-term exposure: See the above information in section 11.

Interactive effects: No data available.

Absence of specific data: No data available.

11.2 Information on other hazards

Endocrine disrupting properties: Substance is not listed.

Other information: See the above information in section 11.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

Caution! To the best of our knowledge the ecotoxicological properties of this material have not been thoroughly investigated.

12.2 Persistence and degradability (in water)

No further relevant information available.

12.3 Bioaccumulative potential

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Not classified as hazardous for environment.

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

SECTION 13: Disposal considerations

13.1 Waste treatment methods**Recommendation:**

Hand over the waste only to a person authorized for further waste disposal / processing according to the waste catalog. At compliance with all physico-chemical (and other) aspects of the nature of the waste respect the waste management hierarchy:

- 1. Prevention
- 2. Reuse
- 3. Material recovery (recycling)
- 4. Other uses (e.g. energy)
- 5. Disposal (e.g. landfilling – only for solid or stabilized liquid waste)

See section 15 for waste disposal legislation.

European waste catalogue:

- 16 03 06 – organic wastes other than those mentioned in 16 03 05
- 15 01 02 – plastic packaging
- 20 01 39 – plastics

Uncleaned packaging:

Recommendation: Dispose as a non hazardous waste.

SECTION 14: Transport information

14.1 UN number or ID number (ADR/RID/ADN, IMDG, IATA)	Void
14.2 UN proper shipping name (ADR/RID/ADN, IMDG, IATA)	Void
14.3 Transport hazard class(es) – Class	Void
14.4 Packing group (ADR/RID/ADN, IMDG, IATA)	Void
14.5 Environmental hazards	Not applicable.
14.6 Special precautions for user	Not applicable.
14.7 Maritime transport in bulk according to IMO instruments	Not applicable.

Transport/Additional information: Not dangerous according to the above specifications.

SECTION 15: Regulatory information

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

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

Named dangerous substances – ANNEX I: Substance is not listed.

REGULATION (EU) 2019/1148 on the marketing and use of explosives precursors

Annex I – RESTRICTED EXPLOSIVES PRECURSORS: Substance is not listed.

Annex II – REPORTABLE EXPLOSIVES PRECURSORS: Substance is not listed.

Regulation (EC) No 273/2004 on drug precursors:

Substance is not listed.

Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors:

Substance is not listed.

European legislation:

- REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP), amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (and subsequent amendments and supplements).
- REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (and subsequent amendments and supplements).
- COMMISSION REGULATION (EU) No 2020/878 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
- Commission Regulation (EU) 2018/605 of 19 April 2018 amending Annex II to Regulation (EC) No 1107/2009 by setting out scientific criteria for the determination of endocrine disrupting properties. DIRECTIVE 2008/98/EC OF THE EP AND OF THE COUNCIL on waste and repealing certain Directives (and subsequent amendments and supplements).

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Training hints

Workers must be trained in accordance with local provisions.

Abbreviations and acronyms

ADR	Accord sur le transport des marchandises dangereuses par Route (International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstract Service
CLP	Classification, Labeling and Packaging of substances and mixtures (Regulation 2008/1272/EC)
EINECS	European Inventory of Existing Commercial Chemical Substances
EC50 / ErC50	Effective concentration causing 50% effect in test organisms
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IATA	International Air Transport Association

ICAO	International Civil Aviation Organization
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration causing death in 50% of test population
LD50	Lethal dose causing death in 50% of test population (median lethal dose)
NLP	No-Longer Polymers
NO(A)EL	Dose value without observed adverse effect
NOEC	Highest concentration of substance at which no adverse effects are observed
PBT	Persistent, Bioaccumulative and Toxic
vPvB	Very Persistent and Very Bioaccumulative
RID	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (International Transport of Dangerous Goods by Rail)
SDS	Safety Data Sheet
UFI	Unique formula identifier
VOC	Volatile Organic Compounds