Semax — Research Peptide, Lyophilised Powder

Prepared to UK REACH (Regulation (EC) No 1907/2006, as retained in UK law) and GB CLP (Regulation (EC) No 1272/2008, as retained in UK law), Annex II 16-section format.

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FOR LABORATORY RESEARCH USE ONLY · NOT FOR HUMAN OR VETERINARY USE, CONSUMPTION, DIAGNOSTIC OR THERAPEUTIC APPLICATION · NOT AUTHORISED AS A MEDICINAL PRODUCT

SECTION 1 IDENTIFICATION

1.1 Product identifier

Product name	Semax (ACTH(4–10) analogue, Met-Glu-His-Phe-Pro-Gly-Pro)
Form supplied	Lyophilised powder, 10 mg per vial
Synonyms	Semaks; ACTH(4–7)-PGP; MEHFPGP
Peptide sequence	H-Met-Glu-His-Phe-Pro-Gly-Pro-OH (one-letter: MEHFPGP)
CAS number	80714-61-0
Salt form as supplied	Acetate salt
Molecular formula	$C_{37}H_{51}N_9O_{10}S$
Molecular weight	813.9 g/mol
Molecular weight, salt	approximately 874.0 g/mol (acetate salt)
PubChem CID	6918288
EC / List number	Not assigned — not listed in the EC Inventory
Catalogue / SKU	EBL-SEMAX
Current lot	EBL-SM-001 — always confirm against the lot printed on your vial

1.2 Relevant identified uses and uses advised against

Identified use	In-vitro laboratory research use only.
Uses advised against	Human or veterinary use, ingestion, injection, cosmetic use, and any diagnostic, therapeutic, prophylactic or in-vivo application. Not for use in or as a food, drug, medical device, cosmetic, or household product.

1.3 Details of the supplier of the safety data sheet

Company	Elite Bio Research Ltd, trading as Elite Bio Labs
Company registration	Registered in England & Wales, Company No. 17306852
Address	London, England, United Kingdom
Email	info@elitebiolabs.co.uk
Website	elitebiolabs.co.uk
Business hours	Monday–Friday, 9:00–17:00 UK time

1.4 Emergency telephone number

UK emergency services	999 — life-threatening emergency
NHS non-emergency	111 — urgent medical advice, United Kingdom
Healthcare professionals	UK National Poisons Information Service (NPIS) via TOXBASE (www.toxbase.org) or 0344 892 0111
Supplier (business hours)	info@elitebiolabs.co.uk — Monday–Friday, 9:00–17:00 UK time

Elite Bio Labs does not operate a 24-hour telephone emergency line. In a medical emergency, contact the UK emergency services or NPIS numbers above, which are staffed continuously.

SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not classified under Regulation (EC) No 1272/2008 (CLP), as retained in GB law. No harmonised classification for CAS 80714-61-0 appears in the GB mandatory classification and labelling list, and no GHS or CLP hazard classification is published in PubChem for this substance.

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 has not been carried out. This product has not been formally assessed against Persistent, Bioaccumulative and Toxic (PBT) or very Persistent, very Bioaccumulative (vPvB) criteria.

INTERPRETING THE ABSENCE OF A CLASSIFICATION

"Not classified" reflects an absence of published GHS/CLP hazard data rather than a positive finding of safety. Handle with the precautions appropriate to a biologically active substance of uncharacterised toxicity: avoid inhalation, ingestion, and contact with skin and eyes.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substance — single component; not a mixture.

Component	CAS No.	EC No.	Concentration / purity
Semax	80714-61-0	Not assigned	≥ 99% (HPLC / MS)

A synthetic heptapeptide structurally related to a fragment of adrenocorticotropic hormone (ACTH 4–10), extended with a Pro-Gly-Pro terminus. Purity is batch-specific and is verified by independent third-party HPLC and MS analysis for every lot. Always check the Certificate of Analysis matching the lot number printed on your vial via the Elite Bio Labs COA Library. No hazardous impurities are reported on the certificate for the current lot.

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures

General	If symptoms occur or persist, seek medical advice and present this safety data sheet.
Inhalation	Move the person to fresh air. If breathing is difficult, or if irritation or discomfort develops or persists, obtain medical attention.
Skin contact	Remove contaminated clothing. Wash the affected area thoroughly with soap and plenty of water. Seek medical advice if irritation persists.
Eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present and easy to do, then continue rinsing. Seek medical advice.
Ingestion	Not intended for ingestion. Do not induce vomiting. Rinse the mouth. Do not give anything by mouth to an unconscious person. Seek medical attention promptly and present this safety data sheet.

4.2 Most important symptoms and effects, acute and delayed

No product-specific symptoms have been identified. As a research compound with limited published toxicological characterisation, observe the affected person for delayed effects.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically. No specific antidote is known.

SECTION 5 FIREFIGHTING MEASURES

Suitable extinguishing media	Use media appropriate to the surrounding fire — dry chemical powder, carbon dioxide, foam, or water spray.
Unsuitable extinguishing media	None known.
Specific hazards	Combustion may generate oxides of carbon and nitrogen and other irritant fumes. Inferred from chemical composition; not product-tested.
Advice for firefighters	Self-contained breathing apparatus and full protective clothing, as for any laboratory fire.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear the personal protective equipment described in Section 8. Avoid contact with skin and eyes. Ensure adequate ventilation.
Environmental precautions	Do not allow the material to enter drains, sewers, or watercourses.
Containment	Avoid dry sweeping, which generates airborne dust. Collect spilled material into a sealable, labelled container.
Cleaning up	Use a damp cloth or a HEPA-filtered vacuum to recover residual powder, then wash the spill area with water. Dispose of waste in accordance with Section 13.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling

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

7.2 Conditions for safe storage, including any incompatibilities

Storage	Store the unopened, lyophilised product at −20 °C, protected from light and moisture, in the original sealed vial. Once reconstituted, refrigerate at 2–8 °C and use promptly, following validated laboratory procedures.
Incompatible materials	Strong oxidising agents, strong acids, and strong bases. Avoid prolonged exposure to atmospheric moisture — the material is hygroscopic.

7.3 Specific end uses

In-vitro laboratory research use only. See Section 1.2.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

No UK EH40 Workplace Exposure Limit (WEL) and no EU Indicative Occupational Exposure Limit Value (IOELV) has been established for this substance.

8.2 Exposure controls

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

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance	Solid — lyophilised powder
Colour	White to off-white
Odour	No data available
Odour threshold	Not determined
pH	Not determined (as-supplied solid)
Melting point / freezing point	Not determined
Initial boiling point and range	Not applicable — decomposes before boiling
Relative density	Not determined
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability	Not classified as flammable
Upper / lower explosive limits	Not determined

Property	Value
Vapour pressure	Not applicable — non-volatile solid
Vapour density	Not applicable
Solubility in water	Soluble
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
Molecular weight	813.9 g/mol

Appearance, colour, and solubility reflect typical behaviour for lyophilised peptides of this composition. Batch-specific appearance is recorded on the Certificate of Analysis.

SECTION 10 STABILITY AND REACTIVITY

Reactivity	No specific reactivity hazards are known under the recommended storage and handling conditions.
Chemical stability	Stable under the recommended storage conditions. As a peptide, it is generally susceptible to degradation by hydrolysis, oxidation, and heat.
Possibility of hazardous reactions	No hazardous polymerisation. No hazardous reactions are known under the recommended conditions.
Conditions to avoid	Heat, light, and moisture. Freeze-thaw cycling once reconstituted.
Incompatible materials	Strong oxidising agents, strong acids, and strong bases.
Hazardous decomposition products	None known under normal storage. Thermal decomposition may yield oxides of carbon and nitrogen and other irritant fumes.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Endpoint	Finding
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 GB CLP Annex VI (categories 1A, 1B or 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 peer-reviewed toxicological dataset sufficient to support a GHS classification was identified for this peptide.

SECTION 12 ECOLOGICAL INFORMATION

Aquatic toxicity	No data available
Persistence and degradability	No product-specific data. As a peptide composed of naturally occurring amino acids, biodegradation is expected.
Bioaccumulative potential	Low bioaccumulation potential is expected, based on high water solubility.
Mobility in soil	No data available
PBT / vPvB assessment	Not assessed
Other adverse effects	Do not allow undiluted product or large quantities to enter groundwater, watercourses, or sewage systems.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product waste	Dispose of the contents and container through a licensed chemical or laboratory waste contractor, in accordance with the Environmental Protection Act 1990, the Hazardous Waste (England and Wales) Regulations 2005 (as amended), and any applicable local authority requirements. Do not dispose of via household waste or drains.
Contaminated packaging	Dispose of empty containers in the same manner as the product. Do not reuse empty containers.
Waste classification code	Not assigned by the supplier. The end user must allocate an appropriate List of Wastes (LoW) code — formerly the European Waste Catalogue (EWC) — for their specific use and waste stream.

SECTION 14 TRANSPORT INFORMATION

Not classified as dangerous goods for transport, based on the absence of a GHS physical, health, or environmental hazard classification (Section 2).

Mode	UN No.	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 identified
Transport in bulk (MARPOL Annex II)	Not applicable — this product is not transported in bulk

SECTION 15 REGULATORY INFORMATION

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. Based on available information, this product is not listed on the UK REACH Candidate List of Substances of Very High Concern and is not subject to authorisation under Annex XIV.
GB 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 has no harmonised classification under GB CLP Annex VI and is not classified as hazardous by the supplier.

COSHH	Control of Substances Hazardous to Health Regulations 2002, as amended. A COSHH risk assessment remains a legal duty of the employer even where a product is unclassified.
MHRA	Not authorised as a medicinal product under the Human Medicines Regulations 2012. Supplied solely as a chemical reagent for in-vitro research and must not be marketed, supplied, or administered as a medicine.
Poisons Act 1972	Not listed under the Poisons Act 1972, as amended, based on available information.
Misuse of Drugs Act 1971	Not listed under the Misuse of Drugs Act 1971 or the Misuse of Drugs Regulations 2001, based on available information.
Chemical safety assessment	A Chemical Safety Assessment under UK REACH has not been carried out by the supplier.

SECTION 16 OTHER INFORMATION

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Data sources	PubChem; ChEMBL; DrugBank; the GB mandatory classification and labelling list; and Elite Bio Labs product records and Certificates of Analysis.
Related documents	Batch-specific purity and identity data are published separately in the Elite Bio Labs Certificate of Analysis library at elitebiolabs.co.uk.

Abbreviations and acronyms

CAS — Chemical Abstracts Service · CLP — Classification, Labelling and Packaging · COSHH — Control of Substances Hazardous to Health · ECHA — European Chemicals Agency · GHS — Globally Harmonised System · IARC — International Agency for Research on Cancer · IATA — International Air Transport Association · IMDG — International Maritime Dangerous Goods · LoW — List of Wastes · MHRA — Medicines and Healthcare products Regulatory Agency · NPIS — National Poisons Information Service · NTP — National Toxicology Program · PBT — Persistent, Bioaccumulative and Toxic · PPE — Personal Protective Equipment · REACH — Registration, Evaluation, Authorisation and Restriction of Chemicals · SDS — Safety Data Sheet · STOT-SE / STOT-RE — Specific Target Organ Toxicity, Single / Repeated Exposure · SVHC — Substance of Very High Concern · vPvB — very Persistent and very Bioaccumulative · WEL — Workplace Exposure Limit.

Disclaimer

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