

# Safety Data Sheet

Matrixyl · palmitoyl pentapeptide-4 (INCI name) · CAS 214047-00-4

**Issued by**  
Calibre Labs LLC  
trading as Pure Peptides

**Prepared to**  
OSHA HazCom 2012  
29 CFR 1910.1200 / GHS

**Version**  
1.0  
Revised 2026-08-28

## Section 1 — Identification

**Product identifier:** Matrixyl

**Synonyms:** palmitoyl pentapeptide-4 (INCI name)

**CAS number:** 214047-00-4

**Product code / catalogue:** purepeptides.com/product/matrixyl

**Recommended use:** In-vitro laboratory research use only. Supplied as a chemical reagent for use by qualified personnel in a controlled laboratory setting.

**Uses advised against:** Not for human or veterinary use. Not for use as a drug, food, food additive, dietary supplement, or cosmetic ingredient. Not for administration to humans or animals by any route. Not for household or general consumer use.

**Supplier:**

Calibre Labs LLC, trading as Pure Peptides

1309 Coffeen Avenue STE 20165

Sheridan, WY 82801

United States

team@purepeptides.com

**Emergency telephone — medical (human exposure or poisoning):**

Poison Help, national Poison Control: **1-800-222-1222**

Available 24 hours a day from anywhere in the United States. Free and confidential. Calls are answered by a trained nurse, pharmacist, or physician at the caller's regional poison center.

**Product and chemical enquiries (non-emergency):** team@purepeptides.com, business hours.

## Section 2 — Hazard(s) identification

**GHS classification:** Not classified.

This substance has not been assigned a GHS hazard classification. No harmonised classification exists for it, and the toxicological data required to classify it under 29 CFR 1910.1200 Appendix A are not available.

**Signal word:** None.

**Hazard pictograms:** None.

**Hazard statements:** None assigned.

**Precautionary statements:**

- Avoid generating dust when handling the lyophilized solid.
- Wash hands thoroughly after handling.
- Wear protective gloves, eye protection, and a laboratory coat.

- Do not release to drains or surface water (see Sections 12 and 13).
- Keep container tightly closed and store as specified in Section 7.

**Hazards not otherwise classified:** None identified.

**Important qualification.** The absence of a classification is a statement about the available evidence, not a determination that this substance is non-hazardous. This material has not been subjected to toxicological testing. Treat it as a substance of unknown toxicity and handle it under the general precautions for research chemicals set out in Sections 7 and 8.

## Section 3 — Composition / information on ingredients

Single-substance material.

| Component | Identifier      | Concentration           |
|-----------|-----------------|-------------------------|
| Matrixyl  | CAS 214047-00-4 | greater than 99 percent |

**Molecular formula:**  $C_{39}H_{75}N_7O_{10}$

**Molecular weight:** 802.05 g/mol

**Composition note.** Purity is reported as HPLC area percent, which is a chromatographic measure and not peptide content by weight. The accompanying counter-ion — commonly trifluoroacetate or acetate — and residual water are present in the vial but are not represented in the formula above. The mass in the vial is therefore not entirely the named compound. Batch-specific composition is given on the Certificate of Analysis for the lot supplied.

## Section 4 — First-aid measures

**In any exposure incident, call Poison Help on 1-800-222-1222 — 24 hours, free, answered by a trained clinician. Have this Safety Data Sheet to hand when you call.**

**Inhalation.** Move the affected person to fresh air and keep them at rest in a position comfortable for breathing. Seek medical attention if symptoms develop or persist.

**Skin contact.** Remove contaminated clothing. Wash the affected area with soap and water. Seek medical attention if irritation develops or persists.

**Eye contact.** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do, then continue rinsing. Seek medical attention if irritation persists.

**Ingestion.** Rinse the mouth with water. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Seek medical attention.

**Most important symptoms and effects:** No data available. No symptoms specific to this substance have been characterised.

**Indication of immediate medical attention and special treatment:** No specific antidote is known. Treat symptomatically. Show this Safety Data Sheet to the attending physician. Note for clinicians: no toxicological data exist for this substance (Section 11).

## Section 5 — Fire-fighting measures

**Suitable extinguishing media:** Water spray, carbon dioxide, dry chemical powder, or alcohol-resistant foam. Select media appropriate to the surrounding fire.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the substance:** Combustion may produce carbon monoxide, carbon dioxide, and nitrogen oxides.

**Special protective equipment for firefighters:** Self-contained breathing apparatus and full protective clothing.

## Section 6 — Accidental release measures

**Personal precautions.** Avoid generating airborne dust. Wear the protective equipment specified in Section 8. Restrict access to the affected area until cleanup is complete.

**Environmental precautions.** Do not allow the material to enter drains, surface water, or groundwater. See Section 12.

**Methods and materials for containment and cleanup.** Collect the solid by careful mechanical means — sweeping or scooping — without raising dust. For a solution spill, absorb with inert absorbent material. Place recovered material in a labelled, closed container for disposal in accordance with Section 13. Decontaminate the affected surface with water and detergent, collecting the rinsate rather than discharging it to drain.

## Section 7 — Handling and storage

*This section is specific to this compound and is drawn from the verified handling chemistry established for it.*

### Handling

Handle the lyophilized powder in a manner that minimises dust generation. Weigh in a balance enclosure or ventilated workspace. Avoid contact with skin and eyes. Do not eat, drink, or smoke in the handling area. Wash hands after handling.

Sterile water is a reasonable first choice but may not suffice, and this is the compound in this batch most likely to resist straightforward aqueous reconstitution. Where solubility proves limiting, the conventional approach for an amphiphile is gentle warming and patience rather than harder agitation, or a small proportion of a water-miscible co-solvent. Confirm compatibility with the downstream use first.

Add diluent down the vial wall, swirl gently, and give it time to clarify. Do not vortex, and watch for foaming: a surfactant-like molecule stabilises foam readily, and material trapped in foam is material not in solution.

Adsorption is a genuine concern rather than a formality. An amphiphile binds surfaces by its hydrophobic tail, so losses to plasticware and to the air-liquid interface are both plausible at low concentration. Low-protein-binding tubes help; fewer transfer steps help more.

### Storage

Store the lyophilized solid at -20 degrees C, sealed, desiccated and protected from light, and let a cold vial warm before opening. Reconstituted, hold at 2 to 8 degrees C, or aliquot and freeze rather than thawing repeatedly.

The realistic failure mode is physical rather than chemical. Amphiphiles aggregate, concentration-dependently and not always reversibly. A solution that was clear when prepared and is hazy later has probably not degraded chemically, and a mass spectrum would say so while the vial remained unusable.

**Incompatible materials in storage:** See Section 10.

## Section 8 — Exposure controls / personal protection

**Occupational exposure limits.** No occupational exposure limits have been established for this substance. There is no OSHA permissible exposure limit, no ACGIH threshold limit value, and no NIOSH recommended exposure limit assigned to it.

**Engineering controls.** Handle in a well-ventilated area. Weigh and transfer the dry powder in a balance enclosure, fume hood, or equivalent local exhaust ventilation, to control the dust that is the realistic route of exposure for a lyophilized solid. An eyewash station and access to washing facilities should be available in the work area.

### Personal protective equipment:

- **Eye protection:** Safety glasses with side shields, or goggles where splashing is foreseeable.
- **Skin protection:** Chemically resistant gloves — nitrile is appropriate for laboratory-scale handling. Laboratory coat. Change gloves on contamination.
- **Respiratory protection:** Not normally required where powder handling is enclosed or ventilated as above. Where dust cannot be controlled by engineering means, use a NIOSH-approved particulate respirator under a compliant respiratory protection

programme.

**General hygiene.** Because this substance has no toxicological characterisation, minimise exposure by all routes as a matter of course rather than in response to a known hazard.

## Section 9 — Physical and chemical properties

| Property                                | Value                                                      |
|-----------------------------------------|------------------------------------------------------------|
| Appearance                              | Lyophilized powder                                         |
| Physical state                          | Solid                                                      |
| Odour                                   | No data available                                          |
| Odour threshold                         | No data available                                          |
| pH                                      | No data available                                          |
| Melting point / freezing point          | No data available                                          |
| Initial boiling point                   | No data available                                          |
| Flash point                             | No data available                                          |
| Evaporation rate                        | No data available                                          |
| Flammability (solid, gas)               | No data available                                          |
| Upper/lower flammability limits         | No data available                                          |
| Vapour pressure                         | No data available                                          |
| Vapour density                          | No data available                                          |
| Relative density                        | No data available                                          |
| Solubility in water                     | Soluble. No experimental quantitative figure is available. |
| Partition coefficient (n-octanol/water) | No data available                                          |
| Auto-ignition temperature               | No data available                                          |
| Decomposition temperature               | No data available                                          |
| Viscosity                               | No data available                                          |
| Molecular formula                       | $C_{39}H_{75}N_7O_{10}$                                    |
| Molecular weight                        | 802.05 g/mol                                               |

**Note on data provenance.** Molecular weight is a computed value. No experimentally determined physical property values are available for this substance.

## Section 10 — Stability and reactivity

**Reactivity:** No reactivity hazard is known under normal conditions of handling and storage.

**Chemical stability:** Stable under the storage conditions specified in Section 7.

**Possibility of hazardous reactions:** None known.

**Conditions to avoid:** Elevated temperature, moisture, light, and repeated freeze–thaw cycling of solutions.

**Incompatible materials:** Strong oxidising agents, strong acids, and strong bases.

**Hazardous decomposition products:** Carbon monoxide, carbon dioxide, and nitrogen oxides.

**Stability note specific to this compound.** The chemical degradation profile is narrow. No cysteine or methionine means no oxidation at sulfur, no asparagine or glutamine means no deamidation, no aspartate means no isomerisation, and the acylated N-terminus closes off diketopiperazine formation. The palmitoyl group attaches through an amide bond rather than an ester, so it does not hydrolyse readily.

## Section 11 — Toxicological information

No toxicological data are available for this substance. It has not been tested for the endpoints below.

| Endpoint                          | Data              |
|-----------------------------------|-------------------|
| Acute oral toxicity (LD50)        | No data available |
| Acute dermal toxicity (LD50)      | No data available |
| Acute inhalation toxicity (LC50)  | No data available |
| Skin corrosion / irritation       | No data available |
| Serious eye damage / irritation   | No data available |
| Respiratory or skin sensitisation | No data available |
| Germ cell mutagenicity            | No data available |
| Carcinogenicity                   | No data available |
| Reproductive toxicity             | No data available |
| STOT — single exposure            | No data available |
| STOT — repeated exposure          | No data available |
| Aspiration hazard                 | No data available |

**Carcinogen listings:** Not listed by NTP, IARC, or OSHA.

**Likely routes of exposure:** Inhalation of dust, skin contact, eye contact, and accidental ingestion.

**Interpretation.** No inference of safety should be drawn from the absence of data in this section. These endpoints are unpopulated because the substance has not been studied, not because it has been studied and found negative.

## Section 12 — Ecological information

**Ecotoxicity:** No ecotoxicological data are available for this substance.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**Other adverse effects:** No data available.

**Practical direction.** Do not discharge this material, solutions of it, or rinsate from decontamination to drains, surface water, or groundwater. Route it to chemical waste as set out in Section 13.

## Section 13 — Disposal considerations

Dispose of this material and its container as chemical waste in accordance with applicable federal, state, and local regulations. Do not discharge to drains or the environment.

Contaminated packaging should be handled as the material itself unless it has been decontaminated, with the rinsate collected rather than discharged.

## Section 14 — Transport information

**UN number:** Not assigned. Not classified as a dangerous good.

| Regulation      | Status                                |
|-----------------|---------------------------------------|
| US DOT (49 CFR) | Not regulated as a hazardous material |
| IATA (air)      | Not regulated as dangerous goods      |
| IMDG (sea)      | Not regulated as dangerous goods      |

**UN proper shipping name:** Not applicable.

**Transport hazard class:** Not applicable.

**Packing group:** Not applicable.

**Environmental hazards — marine pollutant:** Not classified as a marine pollutant.

**Special precautions for user:** Transport in a closed, labelled container. Maintain the storage conditions in Section 7 where product integrity is required.

## Section 15 — Regulatory information

| Regulation                                                 | Status                                                                                                                                                                                                 |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TSCA (Toxic Substances Control Act)                        | Supplied under the research and development exemption at 40 CFR 720.36 — small quantities, for non-commercial research and analysis, used under the supervision of a technically qualified individual. |
| EPCRA Section 302 — extremely hazardous substances         | Not listed.                                                                                                                                                                                            |
| EPCRA Section 313 — toxic chemical release reporting (TRI) | Not listed.                                                                                                                                                                                            |
| CERCLA — reportable quantity                               | Not listed. No reportable quantity is assigned.                                                                                                                                                        |
| California Proposition 65                                  | Not listed.                                                                                                                                                                                            |
| RCRA — hazardous waste                                     | Not a listed hazardous waste (F, K, P, or U). Waste classification remains the generator's determination — see Section 13.                                                                             |

**Product-specific regulatory status.** This material is supplied for in-vitro laboratory research use only. It is not approved by the FDA for human or veterinary use and is not a drug, food, dietary supplement, or cosmetic product.

## Section 16 — Other information

**Revision date:** 2026-08-28

**Version:** 1.0

**Supersedes:** Not applicable — first issue.

**Reason for revision:** First issue.

**Abbreviations used in this document:**

ACGIH — American Conference of Governmental Industrial Hygienists · CAS — Chemical Abstracts Service · CERCLA — Comprehensive Environmental Response, Compensation, and Liability Act · DOT — Department of Transportation · EPCRA — Emergency Planning and Community Right-to-Know Act · GHS — Globally Harmonized System of Classification and Labelling of Chemicals · HPLC — high-performance liquid chromatography · IARC — International Agency for Research on Cancer · IATA — International Air Transport Association · IMDG — International Maritime Dangerous Goods · LC50 — median lethal concentration · LD50 — median lethal dose · NIOSH — National Institute for Occupational Safety and Health · NTP — National Toxicology Program · OSHA — Occupational Safety and Health Administration · PEL — permissible exposure limit · RCRA — Resource Conservation and Recovery Act · STOT — specific target organ toxicity · TLV — threshold limit value · TSCA — Toxic Substances Control Act

**Disclaimer.** This Safety Data Sheet was prepared for a substance supplied for in-vitro laboratory research use only. The information it contains reflects the data available to Pure Peptides at the date of issue. Several sections state that no data are available; this reflects the state of published knowledge for this substance and is not a determination that no hazard exists. The information is provided without warranty, express or implied. Determining that this material is suitable and safe for a particular use, and complying with all applicable law, is the responsibility of the user.