

TECHNICAL DATA SHEET

Product Name: Palmitoyl Tetrapeptide-7

INCI Name: Water, Glycerin, Palmitoyl Tetrapeptide-7, Caprylyl Glycol, Ethylhexylglycerin

CAS Number: 7732-18-5, 56-81-5, 221227-05-0, 1117-86-8, 70445-33-9

Sequence: Pal-Gly-Gln-Pro-Arg-OH

Synonyms: Palmitoyl tetrapeptide-3, Part of Matrixyl 3000, Pal-GQPR, Pal-GQPR; N-Palmitoylargin; Rigin; palmitoyl-Gly-Gln-Pro-Arg-OH; Palm-GQPR; N-palmitoyl-glycyl-L-glutaminy-L-prolyl-L-arginine; N-Palmitoylargin

Chemical Classification: Nanoemulsions

Functional Category: Skin and hair conditioning agent

IUPAC Name: (2S)-2-[[[(2S)-1-[(2S)-5-amino-2-[[2-(hexadecanoylamino)acetyl]amino]-5-oxopentanoyl]pyrrolidine-2-carbonyl]amino]-5-(diaminomethylideneamino) pentanoic acid

Chemical and Physical Properties: Palmitoyl Tetrapeptide-7, formerly known as Palmitoyl Tetrapeptide-3, is a synthetic peptide. It consists of four amino acids and belongs to the group of tetrapeptides. The sequence of this peptide is: Pal-Gly-Gln-Pro-Arg. The abbreviation Pal stands for palmitic acid (n-hexadecanoic acid). It is attached to the first amino acid residue (glycine) via an amide bond, giving the peptide a lipophilic character, helping it to be better absorbed through the skin. Gly is glycine, Gln is glutamine, Pro is proline, and Arg is arginine. The carbonyl group (C=O) present in the amide bonds between amino acids plays a crucial role in stabilizing the peptide structure through hydrogen bonds. The hydroxyl groups (-OH) present on the side chain of glutamine allow additional hydrogen bonds that can help stabilize the peptide structure and interact with other molecules in the skin. The guanidino group (-C(=NH)-NH₂) found on the side chain of arginine is key to biological interactions, such as stimulating collagen production and reducing inflammation. The product is in the form of a clear, transparent liquid, odorless. Peptide content 50 ppm. pH 4.5-6.5.

Disclaimer: The details provided here are specific to the identified material and may not remain accurate if that material is combined with other substances or used in different processes. The information presented is, to the best of the company's knowledge, considered precise and trustworthy as of the date mentioned. However, the company does not make any explicit or implied assurance, guarantee, or claim regarding the information's precision, trustworthiness, or comprehensiveness, and will not be held accountable for any losses, damages, or costs, whether direct or indirect, that arise from its use. Users are encouraged to independently verify the appropriateness and thoroughness of this information for their specific purposes.

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Effects on the Skin: The mechanism of action of Palmitoyl Tetrapeptide-7 is based on reducing the production of interleukin-6 (IL-6). Interleukin-6 (IL-6) is a pro-inflammatory cytokine that plays a key role in inflammatory processes in the body, including the skin. When IL-6 is present in high concentrations, it leads to increased inflammation, which can accelerate the breakdown of collagen and other important structural proteins in the skin, thus speeding up skin aging. In vitro studies have shown that palmitoyl tetrapeptide-7 significantly reduces the production of interleukin depending on the dose. The higher the concentration of palmitoyl tetrapeptide-7, the greater the reduction in interleukin production (up to 40%). It is also known that UV radiation accelerates the production of interleukins. Cells exposed to UV radiation and then treated with palmitoyl tetrapeptide-7 recorded an 86% reduction in interleukin production. Palmitoyl Tetrapeptide-7 can help lighten the skin, contributing to a more even skin tone. Additionally, reducing inflammation can decrease the appearance of redness and other skin unevenness. In combination with Palmitoyl Tripeptide-1, as part of the Matrixyl 3000 complex, the effects are even more pronounced, making this peptide very effective in combating signs of aging.

Usage: Typically used in a concentration of 3-8%. It is part of the aqueous phase. It can be used alone or in combination with palmitoyl tripeptide-1. This combination achieves a synergistic effect, allowing for specific and targeted results on a wider range of skin issues. It can also be combined with ingredients used for skin hydration, such as glycerin, various glycols, triglycerides, or fatty alcohols to facilitate incorporation into formulas. The peptide is considered a completely safe cosmetic ingredient. For external use only.

Animal Testing: Substance not tested on animals

GMO: Non-GMO

Vegan: Contains no animal-derived components

Storage: Store in a refrigerator at temperatures between 4 and 8°C, in a dry and dark place.

Raw Material Origin: USA

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