Import and distribution for Serbia: Farmadria DOO
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# TECHNICAL DATA SHEET

**Product Name:** Hydrolyzed Collagen Protein 1%

**INCI name:** Water, Hydrolyzed Collagen Protein, 1,2-Dihydroxypentane, (+)-Arabinogalactan, 3-O-Ethyl Ascorbic Acid, Sodium Benzoate, Citric Acid

**CAS:** 7732-18-5, 92113-31-0, 5343-92-0, 9036-66-2, 86404-04-8, 532-32-1, 77-92-9

**Chemical classification:** Proteins/Derivatives

**Functional category:** Skin and hair conditioning agent

**Description:** Collagen 1% is a high-quality cosmetic product used in formulations to provide hydration and improve the elasticity of both skin and hair. Hydrolyzed collagen protein is a form of collagen broken down into smaller peptides through hydrolysis, allowing for better solubility and bioavailability, which enhances its efficacy in cosmetics. In skin and hair care preparations, hydrolyzed collagen acts as a humectant, attracting moisture from the environment. The result is softer and smoother skin, while fine lines and wrinkles are reduced, contributing to a firmer and more youthful appearance. This protein strengthens the skin's barrier function, reduces transepidermal water loss, and increases resistance to external factors like pollution and UV radiation, leading to long-term skin health improvement. In hair care products, hydrolyzed collagen strengthens strands, enhances elasticity, and protects against damage. It forms a protective film on the surface of the hair, reducing breakage and split ends while retaining moisture within the strands, making hair softer and more resilient to external influences. In its basic form, the product is a clear, viscous aqueous solution of purified atelocollagen derived from porcine skin, preserved with 0.2% sodium benzoate. It consists of linear polypeptide chains with an average molecular weight of 2000, a collagen concentration between 0.9% and 1.1%, and a pH value between 3.4 and 5.8. This solution is insoluble in oils and fats, which limits its application in oil-based formulations.

**Mechanism of action:** The mechanism of action of hydrolyzed collagen protein is based on its ability to activate fibroblasts, the cells essential for the synthesis of collagen, elastin, and other components of connective tissue. Through hydrolysis, collagen molecules are broken down into smaller peptides that effectively penetrate deeper layers of the skin, stimulating fibroblasts to increase natural collagen production. This contributes to strengthening the skin's structure, enhancing its elasticity, and regenerating

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connective tissue. Hydrolyzed collagen has the ability to bind water, allowing for intense skin hydration. Its presence on the skin surface attracts moisture from the environment, increasing hydration, reducing dehydration, and improving skin texture. The skin becomes softer, smoother, and more resistant to external factors such as dryness and pollution. The reduction in transepidermal water loss further helps the skin retain moisture in its deeper layers, improving its resilience and long-lasting hydration. Additionally, hydrolyzed collagen accelerates the skin regeneration process by promoting new collagen synthesis, helping recover from damage caused by UV radiation, pollution, or aging. The result is a reduction in visible signs of aging, such as wrinkles and sagging, while the skin becomes firmer and revitalized in appearance. Collagen also forms a protective layer on the skin's surface, preserving the integrity of its barrier and shielding it from harmful external factors. In hair care products, hydrolyzed collagen strengthens strands, enhances elasticity, and protects against damage. It forms a protective film on the hair surface, reducing breakage and split ends, while retaining moisture within the strands, making hair softer and more resilient to external influences. This complex mechanism of hydrolyzed collagen's action, involving hydration, regeneration, and protection, provides long-term benefits for both skin and hair, contributing to their healthier and more vital appearance.

**Benefits:**

- Collagen attracts moisture and helps the skin remain hydrated, resulting in softer and smoother skin.
- It stimulates natural collagen production in the skin, increasing its elasticity and firmness.
- Regular use can reduce the appearance of fine lines and wrinkles, giving the skin a more youthful appearance.
- It creates a protective layer on the skin's surface, strengthening its barrier function and shielding it from external harmful influences.
- It promotes skin regeneration, accelerating recovery from damage caused by UV radiation or aging.
- It makes the skin smoother and improves its overall tone and texture.
- In hair care products, it helps strengthen strands, making them more resistant to breakage and damage.

**Usage:** When formulating products such as creams, serums, lotions, or hair treatments,

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the use of hydrolyzed collagen depends on the type of product and the specific goals to be achieved. In moisturizing creams and face serums, the recommended concentration typically ranges from 1% to 5%, providing a sufficiently high dose for moisture retention and improving skin tone without overloading the formula. In these products, collagen is usually combined with other moisturizing ingredients such as hyaluronic acid or plant oils, creating a synergistic effect in skin care and renewal. In anti-aging preparations, the concentration of hydrolyzed collagen is up to 1%, as this dosage stimulates collagen renewal in the skin, while also providing a mild lifting effect and reducing the appearance of fine lines and wrinkles. A combination with antioxidants or peptides further enhances collagen's ability to serve as a foundation for skin regeneration. For hair care products, hydrolyzed collagen is used in concentrations from 0.5% to 5%, to strengthen the hair structure, increase elasticity, and reduce brittleness. In these formulations, collagen acts as a film-forming agent, creating a protective layer that makes the hair smooth and more resistant to damage. In all formulations, hydrolyzed collagen is added to the water phase, taking care to ensure compatibility with other ingredients to maintain the product's stability and effectiveness.

**Storage:** Hydrolyzed 1% collagen can be transported at room temperature, between 20°C and 25°C, without significantly affecting its quality, as it remains stable for a short period under such conditions. However, to preserve its bioactivity and integrity over a longer period, it is recommended to store it in a refrigerator at a temperature between 4°C and 8°C. Lower temperatures help prevent protein degradation, oxidation, or loss of efficacy, thereby extending its shelf life and preserving its functional properties in formulations. Refrigeration also reduces the risk of microbial contamination or undesirable changes in the texture and quality of the ingredient.

**Source of raw materials:** Porcine skin

**Production method:** Collagen protein is produced from porcine skin through enzymatic hydrolysis.

**GMO:** Non-GMO

**Raw material origin:** EU