

TECHNICAL DATA SHEET

Product Name: Hydrolyzed Soy Protein

INCI: Water, Hydrolyzed Soy Protein, 1,2-dihydroxypentane, (+)-Arabinogalactan, 3-o-Ethyl Ascorbic Acid, Benzyl Alcohol, Potassium Sorbate, Sodium Benzoate

CAS: 7732-18-5, 68607-88-5, 5343-92-0, 9036-66-2, 86404-04-8, 100-51-6, 24634-61-5, 532-32-1

Chemical classification: Proteins/derivatives

Functional category: Conditioner for skin and hair care. Creates a flexible, cohesive, and continuous film on the skin and hair.

Description: Hydrolyzed soy protein is an ingredient frequently used in cosmetic products due to its moisturizing and regenerative properties. It is obtained by the process of hydrolysis of soy proteins. During this process, long protein chains are broken down into smaller, bioactive peptides and amino acids, allowing them to penetrate the skin and hair more easily. In hair care, hydrolyzed soy protein acts as a fiber-strengthening agent, repairs damaged cuticles, and helps reduce hair breakage. It contributes to restoring the hair's structure, making it more elastic, denser, and shinier. Thanks to its ability to bind moisture, it aids in hydrating the hair, reducing dryness and lifelessness—especially beneficial for chemically treated hair or hair exposed to heat. When it comes to skin care, hydrolyzed soy protein is known for its ability to hydrate and retain moisture, giving the skin a smoother and firmer texture. The amino acids derived from soy proteins support the skin's natural renewal process, helping reduce signs of aging such as fine lines and wrinkles. In addition, this protein improves skin elasticity, making it softer and more resistant to external influences. Hydrolyzed soy protein can also have a soothing effect on the skin, reducing irritation and redness, which makes it suitable for sensitive skin. In nail care formulations, this ingredient helps strengthen nails, preventing splitting and cracking. The product contains no GMOs, parabens, or formaldehyde and is approved for vegans. The solution is compatible with ionic and nonionic surfactants. It is preserved with benzyl alcohol, sodium benzoate, and potassium sorbate.

Mechanism of action: The mechanism of action of hydrolyzed soy protein is based on its interaction with keratin, the main structural protein in hair. Hair is naturally built from keratin, which provides strength and elasticity, but factors such as heat, chemicals, and

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mechanical damage can weaken this protective layer. When keratin is damaged, the cuticle—the outer layer of the hair—becomes porous and prone to splitting. Thanks to its molecular structure, hydrolyzed soy protein penetrates deep into the damaged hair and binds to the keratin, restoring and strengthening its internal structure. This process closes and repairs microscopic “cracks” on the cuticle surface, preventing further hair degradation, reducing breakage, and improving overall strand resilience. In addition to repairing damage, hydrolyzed soy protein further strengthens the hair fiber itself, making it more elastic and resistant to external stress. A healthy cuticle retains moisture more effectively, and hydrolyzed proteins reinforce this ability. The result is hair that is better hydrated, shinier, and softer to the touch, while also being more resistant to the negative effects of heat (hairdryer, straightener) and chemical treatments (hair dyes, perms). Moreover, hydrolyzed soy protein forms a thin protective layer on the hair surface, helping to retain moisture and protect strands from external damage. This protective barrier not only improves the appearance of the hair—making it smoother and shinier—but also prevents protein loss during washing and other treatments, thereby maintaining overall hair health in the long run.

Benefits:

- Helps hydrate the skin, retaining moisture and preventing dryness.
- Improves skin elasticity, making it softer and more resistant to external influences.
- Reduces the appearance of fine lines and wrinkles by supporting the skin's natural renewal process.
- Soothes irritated skin, reducing redness and discomfort.
- Strengthens hair structure, reducing breakage and increasing elasticity.
- Restores damaged hair, enhancing its shine and volume.
- Moisturizes the hair, reducing dryness and a lifeless appearance.
- Strengthens nails, preventing splitting and cracking.

Effect on skin and hair: Its biological effects are achieved at very low concentrations. Hydrolyzed soy proteins intensify the metabolism of skin cells. The skin becomes more toned, radiant, and brighter. They act preventively by slowing down skin aging, but also regeneratively, by stimulating collagen synthesis. They are effective as agents for removing dark circles around the eyes (“anti-dark circles” agent). After 8 weeks of treatment, it has been clinically proven that they can significantly reduce the appearance of

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dark circles. As a hair conditioner, it serves as an alternative to animal keratin, successfully smoothing hair for easier detangling. In sensory evaluations, it has proven to be an excellent alternative to animal keratin in other categories as well: hair hydration and nutrition. It has been proven to repair and revitalize all hair types.

Method of use: Hydrolyzed soy protein is used in a wide range of cosmetic products, including shampoos, conditioners, facial creams, serums, and body lotions. In hair formulations, it is typically added at concentrations of 1% to 5% to enhance hydration and strengthen hair structure. In skin care products, such as creams or serums, it is used at concentrations of 0.5% to 3% to achieve optimal hydration, improve elasticity, and reduce signs of aging. In body lotions and nail care products, the recommended concentration may vary but often ranges between 1% and 3%, as it allows for deep regeneration and strengthening. When using hydrolyzed soy protein, it is important to follow the formulation guidelines to achieve a balance between efficacy and safety, and it provides the best results when combined with other moisturizing and regenerative ingredients. They are easily incorporated into the water phase of the formulation at temperatures $<40^{\circ}\text{C}$; they are stable at pH values of 5.5–8.0. For external use only.

Animal testing: This substance has not been tested on animals.

GMO: Not GMO

Vegan: Contains no animal-derived components

Transport and storage: Hydrolyzed soy protein can be transported at temperatures up to 25°C (room temperature 20°C to 25°C) without significantly affecting its quality, as it remains stable over shorter periods in such conditions. However, for long-term preservation of its bioactivity and integrity, storage in a refrigerator at 4°C to 8°C is recommended. Low temperatures help prevent protein degradation, oxidation, or loss of efficacy, thus extending its shelf life and maintaining its functional properties in formulations. Cooling also reduces the risk of microbiological contamination or undesirable changes in the texture and quality of the ingredient.

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