

TECHNICAL DATA SHEET

Product name: Hydrolyzed Conchiolin Protein

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

CAS: 7732-18-5, 73049-73-7, 5343-92-0, 9036-66-2, 86404-04-8, 100-51-6, 24634-61-5, 532-32-1

Chemical classification: Mixture, Proteins/Derivatives, Tissue culture derivatives

Functional category: Skin whitening agent, Skin regeneration agent, Hair regeneration agent

Description: Hydrolyzed Conchiolin Protein is a cosmetic ingredient derived from conchiolin, a type of scleroprotein found naturally in the inner layers of mollusk shells, particularly freshwater pearls and pearl oysters. The protein is extracted through enzymolysis and separated using advanced bioengineering technology. The amino acid composition of conchiolin was determined by chromatographic methods, revealing that the protein contains relatively high amounts of leucine, alanine, glycine, and cysteine. Conchiolin protein exhibits remarkable anti-melanogenesis properties. When the skin is exposed to ultraviolet rays (UVB), keratinocytes release endothelin. The endothelin signal is then received by the membrane receptors of melanocytes, which triggers tyrosinase activity and causes rapid melanin production. Since conchiolin peptide is a powerful anti-endothelin antagonist, it can help regulate the signals received by melanocyte receptors and inhibit melanin production. Hydrolyzed Conchiolin Protein appears as a slightly yellowish liquid with a characteristic odor. Its refractive index at 25°C ranges from 1.3920 to 1.5000, with a pH value between 4.5 and 7.0. The content of hydrolyzed conchiolin protein is between 0.02% and 0.1%.

Mechanism of action: Hydrolyzed Conchiolin Protein, through the process of hydrolysis, breaks down into smaller peptides that can easily penetrate the stratum corneum into the deeper layers of the epidermis. These peptides not only replenish proteins in the skin but also actively stimulate the synthesis of new keratin cells, contributing to skin regeneration and improving its structure. In addition to stimulating cell renewal, hydrolyzed conchiolin has excellent hydrating properties. The peptides act as humectants, attracting and retaining moisture in the epidermis, which makes the skin softer, smooth-

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er, and more elastic, reducing dryness and rough texture. The film that conchiolin forms on the skin surface acts as a protective barrier, preventing transepidermal water loss and providing protection from external factors like pollution and UV radiation. Hydrolyzed conchiolin also improves skin radiance and tone, thanks to its reflective properties originating from nacre, giving the skin a natural, healthy appearance. Its antioxidant properties, though milder compared to other antioxidants, help protect the skin from oxidative stress, slowing the aging process and providing protection from UV-induced damage. When applied to hair, hydrolyzed conchiolin binds to keratin, helping the hair retain moisture, making it softer, shinier, and easier to style. It also repairs damage to the hair fibers, improving their structure and protecting them from environmental damage. Due to these beneficial properties, hydrolyzed conchiolin is used in various cosmetic products, from moisturizers and serums to anti-aging treatments and hair care products, offering comprehensive care and revitalization.

Benefits:

- Hydrolyzed Conchiolin Protein helps retain moisture on the skin's surface, improving hydration and reducing dryness.
 - It inhibits melanin production, lightens the skin, and effectively treats hyperpigmentation and dark spots, including dark circles around the eyes.
 - Prevents and corrects signs of aging, helping the skin appear younger.
- Strengthens hair, reduces breakage, and improves shine.
- Forms a protective film on the skin and hair, shielding them from external influences.

Usage: Hydrolyzed Conchiolin Protein is used in various cosmetic products due to its unique properties, such as hydration, skin brightening, and protection. In skincare products like creams, serums, and lotions, it is typically used in concentrations of 1% to 5%, as these concentrations already provide visible benefits. In moisturizing and anti-aging formulations, hydrolyzed conchiolin helps the skin retain moisture and improve texture while brightening the skin tone. In products for treating hyperpigmentation, such as skin-lightening creams or serums for dark spot removal, higher concentrations may be used to effectively inhibit melanin production. In hair care products like shampoos, conditioners, and masks, hydrolyzed conchiolin is usually used in similar concentrations, between 1% and 5%. Its role in these products is to strengthen the hair, reduce breakage, and enhance shine. Due to its ability to form a protective film on the hair's surface,

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it also helps protect against damage caused by external factors, such as heat or pollution. For specific needs, such as skin renewal serums or intensive hair care treatments, concentrations may vary depending on the desired effect and product formulation.

Source of raw materials: Freshwater pearl and pearl oyster shells.

Extraction method: The protein is extracted through enzymolysis and separated using advanced bioengineering technology.

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

GMO: Not GMO

Storage: Hydrolyzed Conchiolin Protein 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, for long-term preservation of its bioactivity and integrity, it is recommended to store it in a refrigerator at temperatures between 4°C and 8°C. Low temperatures help prevent protein degradation, oxidation, or loss of efficacy, extending its shelf life and maintaining its functional properties in formulations. Cooling also reduces the risk of microbial contamination or unwanted changes in the ingredient's texture and quality.