

## TECHNICAL DATA SHEET

**Product Name:** Hydrolyzed Wheat Protein

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

**CAS:** 7732-18-5, 70084-87-6, 5343-92-0, 9036-66-2, 86404-04-8, 100-51-6, 24634-61-5, 532-32-1

**Chemical Classification:** Proteins, derivatives

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

**Description:** Hydrolyzed wheat protein is a functional raw material of plant origin, widely used in cosmetic formulations due to its strong affinity to keratin structures and its moisture-binding capabilities. Obtained by enzymatic hydrolysis, complex wheat proteins are broken down into smaller molecules, enhancing their ability to penetrate and effectively interact with skin and hair. In hair care products, it acts as a conditioning agent, improving mechanical strength, reducing breakage, and contributing to smoother, more elastic, and healthier-looking hair. By binding to damaged cuticles, it participates in surface structure restoration, particularly beneficial for dry, chemically treated, and weakened hair. In skincare, hydrolyzed wheat protein demonstrates significant moisturizing and protective properties. It maintains the functional integrity of the epidermal barrier, reduces tightness and irritation, and contributes to smoother, more resilient skin. Suitable for products targeting dry, sensitive, and reactive skin. Available as a clear amber-colored liquid with characteristic odor, completely water-soluble, with a pH ranging from 4.0 to 6.5. Gluten-free, making it appropriate for gluten-sensitive individuals. Compatible with a broad range of cosmetic ingredients including anionic, nonionic, and mild amphoteric surfactants, ideal for shampoos, conditioners, and liquid soaps. Combines effectively with hyaluronic acid, glycerin, urea, and panthenol derivatives in moisturizing formulations. Stable in aqueous systems and O/W emulsions under normal cosmetic pH ranges. Avoid highly alkaline formulations as functionality may be impaired. Due to natural origin and biocompatibility, it is popular in natural, vegan, and dermatologically oriented cosmetics, enhancing both formulation functionality and perceived quality.

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**Mechanism of Action:** Highly valued in cosmetics for regenerative and moisturizing properties. On hair application, hydrolyzed molecules bind to damaged areas, with amino acid chains filling microscopic cracks, reinforcing and restoring hair structure. This increases resistance to mechanical damage, reduces breakage, and imparts shine and softness. The protein film formed on hair retains moisture, providing hydration and elasticity, serving as a barrier against moisture loss and external stressors like UV radiation and pollution. In skin care, hydrolyzed wheat protein acts as a potent humectant, retaining moisture within the epidermis, reducing dryness and transepidermal water loss. Amino acids can stimulate collagen and elastin synthesis, improving elasticity, reducing fine lines and wrinkles, and rejuvenating the skin. Antioxidant properties neutralize free radicals, protecting skin cells from oxidative stress and premature aging. Anti-inflammatory effects reduce redness and irritation, beneficial for sensitive skin.

### Benefits:

- Attracts and retains environmental moisture, hydrating skin and hair.
- Forms a thin protective film preventing skin dryness.
- Improves manageability, smoothness, and shine of hair.
- Strengthens hair, adds volume, and reduces breakage.
- Reduces the appearance of fine lines and wrinkles.
- Reduces static electricity, facilitating hairstyling.
- Supplies amino acids nourishing and repairing skin and hair.
- Strengthens nails and enhances resilience.
- Enhances formulation stability and product distribution.
- Natural, biodegradable, and environmentally friendly.

**Usage:** Hydrolyzed wheat protein is versatile across cosmetic formulations, with recommended concentrations varying by product type and intended effect. For shampoos and conditioners, typical usage ranges from 0.5% to 5%. Due to peptide sensitivity to high temperatures, incorporate at temperatures below 40°C in the final processing phase. Compatible with mild surfactants, especially glucoside and amphoteric types, without system destabilization. Leave-in hair treatments like sprays and serums generally use up to 2%, ensuring effectiveness without hair clumping. Often combined with gentle moisturizers and film-forming agents like panthenol or aloe extracts. In emulsified skincare products (creams and lotions), concentrations rarely exceed 2%. Stable in O/W emulsions, compatible with cetearyl alcohol, ester emulsifiers, and polyglyceryl derivatives.

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Serves as a supporting hydrating and regenerative agent without compromising formulation texture or stability. In aqueous-based products (gels, tonics, serums), typical usage ranges from 0.2% to 1%. Easily incorporated with moisturizing ingredients such as hyaluronic acid, glycerin, panthenol, and botanical extracts. Compatible with mild acids if pH remains above 4.0. Stable across pH 4.0 to 7.0, tolerating common cosmetic ingredients, including preservatives, antioxidants, and urea derivatives. Avoid combination with strong oxidizers like hydrogen peroxide.

**Animal Testing:** Not tested on animals

**GMO Status:** Non-GMO

**Vegan Status:** Free from animal-derived ingredients

**Transport and Storage:** Stable for transport up to 25°C without quality impact over short periods. For long-term storage, maintain refrigerated at 4°C to 8°C to preserve bioactivity, prevent protein degradation and oxidation, and reduce microbial contamination risks, thus extending shelf life and maintaining functional integrity.

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