

## Technical Data Sheet (TDS)

Issue Date: 20 FEB 2026 Version: V1.0

### 1. Product Overview

- **Product Name:** Hydrolyzed Keratin
- **Chemical Name:** Keratin Hydrolysate (Polypeptide mixture)
- **CAS Number:** 69430-36-0
- **Molecular Formula:** Variable (Polypeptide from animal keratin hydrolysis)
- **Molecular Weight:** 2000-10000 Da (Controllable low molecular weight)
- **Product Trait:** White to off-white free-flowing powder, almost odorless, food/feed/cosmetic/industrial grade; natural polypeptide mixture derived from high-purity animal keratin (wool/hair/nail) via enzymatic hydrolysis; high water solubility ( $\geq 95\%$ ), excellent biocompatibility, non-toxic, fully biodegradable; mild eye irritation only in sensitive individuals (direct dust contact), suitable for multiple industrial applications.
- **Core Properties:** High protein content ( $\geq 90\%$  dry basis), controllable hydrolysis degree (25-40%), low moisture ( $\leq 5\%$ ), ultra-low heavy metal content; good water solubility and solution stability; compatible with most food/feed/cosmetic raw materials; 24-month long shelf life (unopened), stable under normal storage conditions.
- **Main Application:** Cosmetic raw material (skin moisturizing, hair repair); food additive (amino acid nutritional fortifier); feed additive (poultry/livestock/aquatic animal nutrition supplement); textile finishing agent (fabric softening, anti-wrinkle); biochemical reagent (cell culture, polypeptide research).

### 2. Technical Specifications (Multi-Grade, Complies with GB/EU/FDA Standards)

Item	Specification (Food/Feed/Cosmetic/Industrial Grade)
Appearance	White to off-white free-flowing powder, no caking
Protein Content (on dry basis)	$\geq 90.0\%$
Degree of Hydrolysis	25.0-40.0%
Moisture Content	$\leq 5.0\%$
pH Value (1% aqueous solution, 25°C)	5.0-7.0
Solubility (in water, 25°C)	$\geq 95.0\%$
Bulk Density (25°C)	0.45-0.60 g/cm <sup>3</sup>
Sieve Pass Rate (100 mesh)	$\geq 99.0\%$
Heavy Metals (Pb)	$\leq 5$ ppm
Heavy Metals (As)	$\leq 1$ ppm
Heavy Metals (Hg)	$\leq 0.1$ ppm
Total Bacterial Count	$\leq 100$ CFU/g
E. coli	Negative
Yeast & Mold	$\leq 50$ CFU/g
Storage Stability (25°C, 12 months)	Protein content retention $\geq 98.0\%$
Solution Stability (10% aqueous, 25°C)	Clear homogeneous, no precipitation for 7 days

### 3. Product Advantages

1. **Natural & Multi-Grade Compliance:** Derived from natural animal keratin via enzymatic hydrolysis; meets food/feed/cosmetic/industrial grade standards simultaneously; FDA GRAS certified, EU CIR approved, GB 1886.296-2022 compliant; suitable for multiple application fields with one product.
2. **High Purity & Excellent Solubility:** High protein content ( $\geq 90\%$ ), low ash and moisture;  $\geq 95\%$  water solubility, forms clear homogeneous solution without precipitation; low molecular weight (2000-10000 Da) for easy absorption by human/animal skin and body.
3. **Stable Performance:** 24-month shelf life (unopened,  $\leq 25^\circ\text{C}$ ); 6-month shelf life after opening (sealed dry storage); stable in pH 4.0-8.0 formulations; no decomposition, discoloration or precipitation under normal storage/use conditions; good thermal stability (stable at  $\leq 100^\circ\text{C}$ ).



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4. **Excellent Biocompatibility:** Natural polypeptide composition, consistent with human/animal skin/hair amino acid structure; non-toxic, non-irritating, no sensitization; in cosmetic use, it can repair skin/hair keratin, improve moisture retention and elasticity.

## 4. Application Fields & Dosage Guide

### 4.1 Main Application Fields

- **Cosmetic Industry:** Skin care (serum, lotion, cream, mask) - moisturizing, anti-aging, skin barrier repair; hair care (shampoo, conditioner, hair mask) - hair repair, anti-frizz, improve hair luster and elasticity.
- **Food Industry:** Nutritional fortifier for protein powder, functional beverages, dairy products, bakery food, health food; supplements essential amino acids (cysteine, proline) for human body.
- **Feed Industry:** Amino acid supplement for poultry (chicken/duck), livestock (pig/cattle), aquatic animals (fish/shrimp); improves feed conversion rate, promotes animal growth and fur/feather development; enhances animal immunity.

### 4.2 Recommended Dosage (By Application Field)

Application Field	Dosage (w/w in formulation/solution)
Cosmetic - Skin Care	1.0-5.0%
Cosmetic - Hair Care	2.0-8.0%
Food - Functional Beverage/Protein Powder	0.5-3.0%
Feed - Poultry/Livestock	0.2-1.0%
Feed - Aquatic Animals	0.3-1.5%
Textile - Fabric Finishing	1.0-4.0% (finishing solution)
Biochemical Reagent	0.01-0.5% (aqueous solution)

## 5. Usage & Formulation Guidelines

- **Cosmetic Formulation:** Add the powder to the aqueous phase under normal temperature (25-35°C) and low-speed stirring (100-200 rpm); dissolve completely before mixing with oil phase; suitable for all water-based and oil-in-water (O/W) formulations; optimal pH 5.0-7.0.
- **Food Formulation:** Dissolve the powder in water/liquid raw materials at 25-80°C under stirring; can be added at any production step (before/after sterilization, sterilization temperature ≤121°C is recommended); compatible with food additives (sugars, vitamins, thickeners).
- **Feed Formulation:** Mix the powder directly with feed powder or dissolve in water and spray on feed pellets; no heating required (room temperature is sufficient); compatible with feed minerals, vitamins and other additives (avoid strong oxidizing feed additives).

## 6. Packaging & Storage

- 250 g Food-grade HDPE plastic jar (laboratory/cosmetic small-batch use, inner seal + screw cap)
- 1 kg Food-grade HDPE plastic jar (cosmetic/food small-batch use, inner seal + dust-proof spoon)
- 5 kg Food-grade HDPE plastic bucket (feed/cosmetic medium-batch use, anti-leakage cap + handle)
- 25 kg Food-grade HDPE plastic drum (bulk food/feed/industrial use, inner plastic lining + anti-leakage cap)
- 200 kg Food-grade HDPE plastic drum (large-scale industrial/feed use, double anti-leakage cap + palletized)
- **Custom Packaging:** 500 g food-grade bottles; 50 kg stainless steel drums (high-purity cosmetic/biochemical use) available upon request.

## 7. Safety & Protection

- The product is non-toxic, GRAS certified, with only mild transient eye irritation in sensitive individuals upon direct dust contact; minimal personal protection required for all handling operations.
- **Routine Handling:** No special PPE needed; ordinary work clothes, disposable gloves and dust mask (for powder) are sufficient.