

## Technical Data Sheet (TDS)

Issue Date: 18 FEB 2026 Version: V1.0

### 1. Product Overview

- **Product Name:** Hydrolyzed Collagen (Powder)
- **Chemical Name:** Collagen Hydrolysate (Polypeptide mixture)
- **CAS Number:** 9064-67-9
- **Molecular Formula:** Variable (Polypeptide from animal collagen hydrolysis)
- **Molecular Weight:** 1000-5000 Da (Controllable low molecular weight)
- **Product Trait:** White to off-white free-flowing powder, almost odorless, food/feed/cosmetic/health care grade; natural polypeptide mixture derived from high-purity animal collagen (bovine/porcine fish skin/bone) via enzymatic hydrolysis; high water solubility ( $\geq 95\%$ ), excellent biocompatibility, non-toxic, fully biodegradable; mild eye irritation only in sensitive individuals (direct dust contact), rich in glycine, proline and hydroxyproline, with excellent nutritional and functional properties.
- **Core Properties:** High protein content ( $\geq 90\%$  dry basis), controllable hydrolysis degree (20-35%), 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, anti-aging, wrinkle reduction); food/health care product raw material (amino acid nutritional fortifier); feed additive (poultry/livestock/aquatic animal nutrition supplement); biochemical reagent (cell culture, polypeptide research).

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

Item	Specification (Food/Feed/Cosmetic/Health Care Grade)
Appearance	White to off-white free-flowing powder, no caking
Protein Content (on dry basis)	$\geq 90.0\%$
Degree of Hydrolysis	20.0-35.0%
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)	0.40-0.55 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 collagen via enzymatic mild hydrolysis; meets food/feed/cosmetic/health care grade standards simultaneously; FDA GRAS certified, EU CIR approved, GB 31645-2021 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 (1000-5000 Da) for easy absorption by human/animal body and skin.



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- 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  $\leq 100^{\circ}\text{C}$ ).
- 4. **Rich in Functional Amino Acids:** Abundant in glycine, proline and hydroxyproline (characteristic amino acids of collagen); in cosmetic use, it can repair skin collagen, improve skin moisture retention and elasticity; in food use, it supplements essential amino acids for human body.

#### 4. Application Fields & Dosage Guide

- **Cosmetic Industry:** Skin care (serum, lotion, cream, mask, essence) - moisturizing, anti-aging, wrinkle reduction, skin barrier repair; hair care (shampoo, conditioner, hair mask) - hair repair, improve hair toughness and luster.
- **Food & Health Care Industry:** Nutritional fortifier for protein powder, functional beverages, dairy products, bakery food, health care products, solid drinks; supplements collagen for human body, suitable for daily nutritional supplement.

#### 4.2 Recommended Dosage (By Application Field)

Application Field	Dosage (w/w in formulation/solution)
Cosmetic - Skin Care	1.0-8.0%
Cosmetic - Hair Care	2.0-10.0%
Food - Functional Beverage/Protein Powder	0.5-5.0%
Health Care Products - Solid Drinks/Capsules	5.0-20.0%
Feed - Poultry/Livestock/Pets	0.2-2.0%
Feed - Aquatic Animals	0.3-1.5%
Biochemical Reagent	0.01-0.5% (aqueous solution)

#### 5. Usage & Formulation Guidelines

- **Cosmetic Formulation:** Add the powder to the aqueous phase under normal temperature ( $25-35^{\circ}\text{C}$ ) 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 for better skin compatibility.
- **Food/Health Care Formulation:** Dissolve the powder in water/liquid raw materials at  $25-80^{\circ}\text{C}$  under stirring; can be added at any production step (before/after sterilization, sterilization temperature  $\leq 121^{\circ}\text{C}$  is recommended); compatible with food additives (sugars, vitamins, thickeners, sweeteners).

#### 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/health care 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)

#### 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.
- **Large-Scale Bulk Handling:** Wear nitrile rubber gloves and safety glasses to avoid accidental dust/eye contact; basic ventilation is sufficient (local exhaust ventilation recommended for dust-generating operations).