

Product Name & Description

**Product Name:** Premium Hydrolyzed Bovine Collagen Peptide (Energy & Protein Bar Grade)

**Description:** Premium food-grade hydrolyzed bovine collagen peptide, specifically optimized for high-protein nutritional formulations such as energy bars, protein bars, and meal replacement snacks. Sourced 100% from clinically healthy bovine hides via controlled enzymatic hydrolysis, this product exhibits an exceptionally low molecular weight profile ( $\leq 2000$  Daltons), ensuring outstanding bioavailability and rapid absorption. It is custom-engineered to overcome common protein-bar defects like hardening over shelf-life, crumbliness, and dryness, serving as a functional nutrient matrix that significantly improves texture and shelf-life stability.

Key Specifications & Quality Parameters

| Analysis Item               | Specification Standard                            | Test Method Reference             |
|-----------------------------|---------------------------------------------------|-----------------------------------|
| Appearance                  | White to off-white refined powder                 | Visual / USP Standard             |
| Odor & Taste                | Completely bland, neutral taste, zero animal odor | Sensory Panel (10% Solution)      |
| Protein Content (Dry basis) | $\geq 90.0\%$                                     | Kjeldahl Method (\$N imes 6.25\$) |
| Average Molecular Weight    | $\leq 1000 - 2000$ Daltons                        | Gel Permeation Chromatography     |
| Solubility                  | 100% cold-water soluble, swift dispersion         | Standard Dissolution Test         |
| Bulk Density                | 0.30 – 0.45 g/ml                                  | Tapped / Loose Density Method     |
| pH (10% Solution at 25°C)   | 5.0 – 7.0                                         | Potentiometric                    |
| Loss on Drying (Moisture)   | $\leq 6.0\%$                                      | 105°C for 3 Hours                 |
| Residue on Ignition (Ash)   | $\leq 1.5\%$                                      | Gravimetric (550°C)               |
| Heavy Metals (as Pb)        | $\leq 4.0$ ppm                                    | Atomic Absorption (AAS)           |
| Arsenic (As)                | $\leq 0.8$ ppm                                    | ICP-MS                            |
| Total Aerobic Plate Count   | $\leq 1000$ cfu/g                                 | GB / USP Standard                 |
| Molds & Yeasts              | $\leq 50$ cfu/g                                   | GB / USP Standard                 |
| Coliforms                   | $\leq 10$ cfu/g (or Absent)                       | Negative                          |
| Salmonella Sp.              | Absent / 25g                                      | Negative                          |

## Functional Advantages in Energy & Protein Bars

- **Prevention of Bar Hardening (Anti-Staling):** Unlike whey or casein which absorb moisture over time and cause bars to become rock-hard, collagen peptides have unique moisture-binding kinetic traits that maintain a soft, chewy, and indulgent bar texture throughout its entire shelf-life.
- **Excellent Binding & Plasticity:** Acts as a highly efficient cohesive matrix, holding grains, crisps, nuts, and fats together seamlessly. This reduces crumbling during high-speed cutting, trimming, and wrapping operations.
- **Clean Sensory Blank Canvas:** Provides a totally bland taste and neutral odor. It allows delicate bar flavors (such as peanut butter, chocolate, sea salt caramel, and fruits) to stand out fully without requiring costly flavor-masking compounds.
- **Optimized Nutritional Value:** Supplies high-purity protein rich in functional amino acids (Glycine, Proline, and Hydroxyproline) which support joint health, connective tissue repair, and athletic recovery, enhancing the functional marketing claim of sports bars.

## Regulatory Compliance & Certification Matrix

Produced under world-class processing chains ensuring stringent compliance with international food and supplement frameworks:

- **Quality Frameworks:** Fully compliant with Good Manufacturing Practices (GMP), ISO 9001, ISO 22000, and FSSC 22000.
- **Global Import Alignment:** Meets or exceeds standards defined by the FDA, European Union Regulations, and China National Standards (GB).
- **Dietary Certifications:** Available with accredited Halal and Kosher certifications.
- **Biological Clean Source:** 100% sourced from BSE-free, clinically monitored healthy herds, backed by rigid Veterinary Health Certification.

## Packaging, Logistics & Storage Architecture

**Packaging:** Multi-wall heavy-duty food-grade Kraft paper outer bags integrated with a multi-layered Polyethylene (PE) moisture-barrier inner liner. Net weight: 20 KG or 25 KG per bag.

**Logistical Loading Payload:** Approx. 8 – 10 Metric Tons per 20ft FCL container without pallets (varies slightly based on target particle sizes).

**Storage Guidelines:** Store in the unopened original container in a clean, cool (< 25°C), and dry warehouse space (< 60% relative humidity). Keep heavily protected from direct sunlight, ambient moisture, and highly volatile aromatic compounds.

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*Disclaimer: The details presented inside this Technical Data Sheet are correct to the best of our manufacturing capabilities. Customers are strongly encouraged to run small-scale pilot bar trials to confirm formulation rheology under specific line stress.*