

Product Name & Description

Product Name: Premium Undenatured Collagen Type II (Active Joint Comfort Grade)

Description: Premium-grade undenatured type II collagen, extracted from healthy chicken sternum cartilage using advanced, low-temperature non-enzymatic manufacturing technologies. Unlike standard hydrolyzed collagen, this premium ingredient retains its native, complete triple-helix molecular structure, preserving crucial bioactive epitopes. These active structures interact directly with Peyer's patches in the small intestine via oral tolerance pathways to significantly halt the auto-immune breakdown of articular cartilage. It is a highly potent, low-dosage ingredient optimized for next-generation joint comfort, mobility, and flexibility supplements.

Key Specifications & Quality Parameters

Analysis Item	Specification Standard	Test Method Reference
Appearance	White to off-white or light yellowish powder	Visual / USP Standard
Odor & Taste	Characteristic, neutral, bland taste profile	Sensory Panel
Active Native Type II Collagen	≥ 25.0% / ≥ 3.0% (Custom higher grades available)	ELISA (Enzyme-Linked Immunosorbent Assay)
Total Collagen Content	≥ 60.0%	Hydroxyproline Assay / HPLC
Particle Size	100% through 80 mesh	Standard Sieve Analysis
Loss on Drying (Moisture)	≤ 7.0%	105°C for 3 Hours
Residue on Ignition (Ash)	≤ 10.0%	Gravimetric (550°C)
Bulk Density	0.30 – 0.55 g/ml	Tapped / Loose Method
Heavy Metals (as Pb)	≤ 10 ppm	Atomic Absorption (AAS)
Arsenic (As)	≤ 1.0 ppm	ICP-MS
Total Aerobic Microbial Count	≤ 1000 cfu/g	USP <61>
Molds & Yeasts	≤ 100 cfu/g	USP <61>
Coliforms	≤ 10 cfu/g (or Negative)	USP <62>
Salmonella Sp.	Absent / 25g	Negative
Escherichia Coli	Absent / g	Negative

Clinically Proven Mechanisms & Joint Benefits

- **Mechanism of Oral Tolerance:** The intact triple-helix structure safely transits through the stomach to interact with the immune system in the gut. By desensitizing T-cells, it down-regulates the auto-immune response responsible for cartilage degradation.
- **Superior Low-Dose Efficacy:** Delivers remarkable clinical efficacy at a highly concentrated small dose (typically 40 mg per day), replacing the need for large 1500 mg daily doses of traditional Glucosamine and Chondroitin.
- **Enhancement of Joint Mobility & Flexibility:** Promotes the endogenous secretion of joint-lubricating synovial fluid, accelerating cartilage self-repair and expanding the pain-free range of motion during daily athletic stress.
- **Fast-Acting Comfort Induction:** Promotes rapid alleviation of morning joint stiffness, knee extensions, and exercise-induced joint aches, significantly increasing knee performance scores.

Formulation Flexibility & Application Guidelines

- **Premium Hard Gelatin Capsules:** Its minimal daily dosage (40mg) allows formulators to save capsule space, leaving substantial room to blend synergistic joint ingredients like Hyaluronic Acid, MSM, Boswellia, or Turmeric.
- **Tablets & Caplets:** Possesses consistent dry-flow particle traits and excellent compressibility profiles, mitigating capping risk during high-speed commercial tablet press operations.
- **Functional Powder Mixes & Sachets:** Easily micronized or incorporated into premium sports recovery shake blends and direct-to-mouth nutritional stickpacks.
- **Processing Temperature Limit:** Because excessive heat denatures the active triple-helix structure, blending temperatures should ideally remain below 55°C to maximize potency.

Regulatory Compliance & Safety Accreditation

Our undenatured collagen type II is manufactured in deep compliance with the highest food safety benchmarks:

- **System Certifications:** Produced in strict accordance with Good Manufacturing Practices (GMP), ISO 9001, ISO 22000, and FSSC 22000 loops.
- **Global Access:** Fulfills regulatory standards specified by the US FDA, European Food Safety Authority (EFSA), and China National Standards (GB).
- **Accredited Verification:** Fully certified Halal and Kosher compliant. Sourced 100% from clinically healthy, veterinary-inspected avian resources.

Packaging, Logistics & Storage Architecture

Packaging: Sealed inside a double moisture-barrier Polyethylene (PE) inner liner bag, enclosed within a high-density fiber drum. Standard net weight: 25 KG per drum (smaller custom boxes are available for trial pilot lots).

Storage Requirements: Maintain in unopened original drums. Store in a clean, dry, and cool warehouse area (temperature strictly < 25°C, relative humidity < 60%). Keep heavily protected from ambient moisture, freezing conditions, heat vectors, and intense direct sunlight.

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Disclaimer: The specifications reported in this document represent average factory validation results. Because it contains native protein, formulators must protect the raw matrix from extreme thermal or strong acidic environments during manufacturing.