

Product Name & Description

Product Name: Premium Bovine Chondroitin Sulfate Sodium (Active Joint Health Grade)

Description: Premium-grade Chondroitin Sulfate Sodium, purified 100% from traceable, healthy bovine cartilage matrix under strict sanitary processing networks. As a key structural sulfated glycosaminoglycan (GAG), this high-purity macromolecular active ingredient is an essential building block of the extracellular matrix in human articular tissue. It features superb white appearance, high crystalline flowability, and rapid water clarity, engineered explicitly for next-generation joint comfort, sports protection, anti-inflammatory formulations, and osteoarthritis dietary supplements.

Key Specifications & Quality Parameters

Electrophoretic Purity

Analysis Item	Specification Standard	Test Method Reference
Appearance	White or off-white refined powder; highly hygroscopic	Visual / USP Standard
Odor & Taste	Completely odorless, slightly salty taste profile	Sensory Panel
Assay (Purity)	90.0% – 105.0% (Dry basis)	CPC Titration / Enzymatic HPLC (USP)
Identification	Conforms to standard chromatographic response	Infrared (IR) / HPLC / Sodium Test
Clarity & Color of Solution	Clear, transparent, absorbance ≤ 0.35 (at 420nm)	Spectrophotometer (10% sol)
Specific Optical Rotation	-20.0° to -30.0° (Dry basis)	Polarimetry (USP)
pH (1% Solution at 25°C)	5.5 – 7.5	Potentiometric
Loss on Drying (Moisture)	≤ 10.0%	105°C for 4 Hours
Residue on Ignition (Ash)	20.0% – 30.0% (Natural sodium salt status)	Gravimetric (600°C)
Chloride	≤ 0.50%	Silver Nitrate Titration
Heavy Metals (as Pb)	≤ 10 ppm	AAS / ICP-MS
≥ 98.0% (Zero mammalian cross-adulteration)	Electrophoresis (USP)	
Total Aerobic Plate Count	≤ 1000 cfu/g (Strict pharma thresholds)	USP <61>
Molds & Yeasts	≤ 100 cfu/g	USP <61>
E. Coli & Salmonella Sp.	Absent / g & Absent / 25g	USP <62> / Negative

Functional Health Benefits & Mechanism of Action

- **Cartilage Lubrication & Shock Cushioning:** Holds water molecules inside the joint matrix like a microscopic sponge, creating an osmotic cushion pressure that absorbs mechanical shocks and reduces structural friction between bone endings.
- **Inhibition of Catabolic Enzymes:** Clinically recognized to suppress matrix metalloproteinases (MMP) and elastase enzymes that aggressively break down articular cartilage, delaying osteoarthritic degradation loops.
- **Synergistic Connective Rebuilding:** Functions in perfect metabolic harmony when combined with Glucosamine, MSM, and Type II Collagens, accelerating the synthesis of new proteoglycans and strengthening joint capsule integrity.
- **Anti-Inflammatory Modulation:** Helps reduce pro-inflammatory cytokines and nitric oxide synthesis around the synovial fluid, alleviating daily joint stiffness and reducing post-exercise joint soreness.

Formulation Flexibility & Application Highlights

- **Premium Tablets & Flex Caplets:** Optimized tapped density and fine particle flow properties prevent segregation, supporting high mechanical tablet hardness and minimal friability on high-speed industrial compression lines.
- **Two-Piece Hard Shell Capsules:** Blends perfectly with companion joint matrices, ensuring uniform capsule weight distribution and consistent disintegration curves.
- **Instant Functional Powder Packs:** Excellent cold-water solubility and ultra-low solution turbidity ensure professional visual clarity in pre-workout recovery powder drinks.
- **Sensory Flavor Friendly:** Due to its neutral odor and absence of sour notes, it accommodates clean flavor architectures without utilizing excessive synthetic masking agents.

Regulatory Compliance & Purity Accreditation

- **Pharmacopoeia Benchmarks:** Synchronized to comply completely with the United States Pharmacopeia (USP), European Pharmacopoeia (EP), and international supplement purity protocols.
- **BSE/TSE-Free Guarantee:** Extracted exclusively from 100% trace-verified healthy bovine tissue. Sourced from officially audited BSE-free herds, backed by rigid Veterinary Health Certification.
- **Manufacturing Excellence:** Produced inside state-of-the-art facilities in absolute compliance with food/supplement cGMP, ISO 9001, ISO 22000, and FSSC 22000 management networks. Halal and Kosher verified.

Packaging, Logistics & Storage Architecture

Packaging: Securely sealed inside double food-grade Polyethylene (PE) inner moisture-barrier bags, enclosed within high-density fiber drums. Standard net weight: 25 KG per drum.

Storage Guidelines: ****Highly Hydroscopic Matrix.**** Maintain original drums tightly sealed. Store in a clean, cool (< 25°C), and exceptionally dry warehouse space (relative humidity strictly ****below 50%****). Keep heavily protected from ambient moisture, freezing conditions, heat vectors, and intense direct sunlight.

BEYOND BIOPHARMA CO., LTD.

Tel: +86 21 65010906 | Cell/Whatsapp/Wechat: +86 13482884055 | Email: sales@beyondbiopharma.com

Disclaimer: The analytical metrics reported inside this Technical Data Sheet reflect current factory quality results. Because this ingredient is highly hygroscopic, formulators must maintain relative humidity control below 45% during commercial blending and capsule-filling cycles.