



Certificate of Analysis

Chondroitin Sulfate Sodium 90% USP 40

Solvents Used	Water & Ethanol	Country of Origin	China
Sterillization Status	Non-Irradiation / Non-ETO	Origin	Bovine
Manufactureing Date	3/5/2021	Batch No.	CS202103006
Expiration Date	3/4/2024	Batch Quantity	1000kg

ITEMS	SPECIFICATION	RESULT	TEST METHOD
Appearance	White or almost white powder	White powder	In House
I.D.-A Infrared absorption	Compare with the CRS	Corresponding	Method USP
I.D.-B General Sodium	Gives reaction of sodium	Positive	USP
I.D.-C Disaccharide Composition	Δ Di-4S / Δ Di-6S is NLT 1.0	> 1.0	USP
I.D.-D Specific Rotation	Between -20.0° to -30.0°	Meet requirement	USP
Content by CPC Titration	90.0%-105.0% (dried basis)	93.30%	USP
Content by HPLC	NLT 90.0% (dried basis)	90.40%	In House Method
Content by Enzymatic HPLC	NLT 83.0% (dried basis)	84.60%	USP
Residue On Ignition	20.0%-30.0%	25.30%	USP
Chloride	NMT 0.50%	<0.50%	USP
Sulfate	NMT 0.24%	<0.24%	USP
Electrophoretic Purity	NMT 2%	<2%	USP
Limit Of Protein	NMT 6.0% (dried basis)	5.00%	USP
Total Bacterial Count	NMT 1000 cfu/g	200 cfu/g	USP
Yeasts & Molds	NMT 100 cfu/g	30cfu/g	USP
Salmonella	Absence	Not detected	USP
Escherichia Coli.	Absence	Not detected	USP
Heavy Metals	NMT 20 ppm	<20 ppm	USP
Pb	NMT 0.5 ppm	0.1068	In House Method
As	NMT 1 ppm	0.094	In House Method
Cd	NMT 1 ppm	Not detected (<0.01)	In House Method
Hg	NMT 0.3 ppm	Not detected (<0.02)	In House Method
Nonspecific Dissaccharides	NMT 10.0%	8.70%	USP
Clarity And Color Of Solution	NMT 0.35 at 420nm	0.140	USP
Optical Rotation	-20.0° to -30.0°	-22.5°	USP
pH	5.5-7.5	6.9	USP
Loss On Drying	NMT 10.0%	9.40%	USP
Residue of Solvents	NMT 5000 ppm (Ethanol)	3660ppm	USP
Particle Size	NLT 95% through 80 mesh	97.60%	USP
Bulk Density	0.6g/mL-0.85g/mL	0.61	USP
Tapped Density	0.65g/mL-0.95g/mL	0.85	USP