

## Certificate of Analysis

### Product Name: Chondroitin Sulfate Sodium (Porcine)

Batch No.: CS20220106

Country of Origin: P. R. China

Manufacture Date: Jan. 06, 2022

Expired Date: Jan. 05, 2025

Non-Irradiated/Non-ETO/Treat by Heat Only

Source: Porcine

Analysis Item	Specification	Result	Method
<b>Assay (dried basis)</b>	<b>≥ 90.0%</b>	<b>103.5%</b>	<b>EHPLC</b>
Appearance	White to off-white powder	Complies	Visual
Identification	Positive	Complies	USP42-NF37<197K>
Specific Rotation	-20.0° – -30.0°	-24.50°	USP42-NF37<781S>
pH	5.5 – 7.5	6.6	USP42-NF37<791>
Powder Size	≥ 95% through 60 mesh	Complies	USP #60 Sieve
Bulk Density	0.6 – 1.1 g/mL	0.66 g/mL	USP42-NF37<616>
Loss on Drying	≤ 12.0%	10.18%	USP42-NF37<731>
Residue on Ignition	20% – 30%	25.4%	USP42-NF37<281>
Protein	≤ 6.0%	3.4%	USP42-NF37<851>
Chloride (Cl)	≤ 0.50 %	Complies	USP42-NF37<221>
Sulfate (SO <sub>4</sub> )	≤ 0.24%	Complies	USP42-NF37<221>
Total Heavy Metals	≤ 10 µg/g	Complies	USP42-NF37<231>
Arsenic (As)	≤ 1.0 µg/g	Complies	ICP-MS
Cadmium (Cd)	≤ 0.5 µg/g	Complies	ICP-MS
Lead (Pb)	≤ 1.0 µg/g	Complies	ICP-MS
Mercury (Hg)	≤ 0.5 µg/g	Complies	ICP-MS
Total Plate Count	≤ 1,000 cfu/g	Complies	USP42-NF37<2021>
Molds and Yeasts	≤ 100 cfu/g	Complies	USP42-NF37<2021>
<i>Salmonella</i>	Absence	Complies	USP42-NF37<2022>
<i>E. Coli</i>	Absence	Complies	USP42-NF37<2022>
<i>Staphylococcus aureus</i>	Absence	Complies	USP42-NF37<2022>

Packing: 25 kg/drum, packing in paper-drums and two sealed plastic-bags inside.

Storage: Store in a well-closed container away from moisture, direct light and heat.

Expired date: Re-test after three years from the manufacturing date.

**Conclusion: Conform to Specification.**

Quality Assurance officer: \_\_\_\_\_



Analyst: \_\_\_\_\_

