

**SPECIFICATION**

CHS015

Rev 17

**Chondroitin Sulfate Sodium USP***Bovine Source*

Description	Species source	Bovine	
	Excipients	No additives or preservatives	
Physical Properties	Item	Method	Specification
	Appearance	Visual	Creamy white powder
	Odor	Organoleptic	Low and characteristic
	Bulk density	Loose fill	NLT 0.5 g/mL
	Particle size	Ro tap	100% through USS#20 (850 micron) NLT 85% through USS#40 (425 micron) 30-70% through USS#200 (75 micron)
Analytical	Chondroitin Sulfate Na	USP Monograph	90.0%-105.0% (odb, USP reference std)
	Identification	USP<197K>	IR Compares to standard
		USP<191>	Meets USP requirements for sodium
	Clarity	USP Monograph	NMT 0.35
	Specific rotation	USP<781s>	-20.0° to -30.0°
	Loss on drying	USP<731>	NMT 10.0%
	pH	USP<791>	5.5-7.5
	Residue on ignition	USP<281>	20.0%-30.0%
	Chloride (Cl)	USP<221>	NMT 0.50%
	Sulfate	USP<221>	NMT 0.24%
	Protein	USP Monograph	NMT 6.0%
	Heavy metals	Ph. Eur. <2.4.8 >	NMT 20 ppm
	Mercury (Hg)	USP<852> / USP<730>	NMT 0.5 ppm
Microbial	Electrophoretic purity	USP monograph	Meets the requirements of USP
	Total aerobic	USP<2021>	NMT 1,000 cfu/g
	Yeast & Mold	USP<2021>	NMT 100 cfu/g
	<i>E. coli</i>	USP<2022>	Negative
	<i>Salmonella</i>	USP<2022>	Negative
Other	Retest date	When the product is stored in unopened containers under ambient temperature conditions, the retest date of this product should exceed three years from the date of manufacture. Due to the material's hygroscopic property, appropriate care must be taken when handling and storing.	
	Shipping information	Available in 25 kg double poly-lined fiber drums.	

The information presented herein is based on our best knowledge and believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. TSI Group, shall not be held liable for any damage resulting from handling or from contact with the specified product.


**SPECIFICATION**

CHS015

Rev 17

**Chondroitin Sulfate Sodium USP***Bovine Source***TSI Approval****Authored by/ Date**

Reiya Zhou/ Jan 11, 2021

Approved by/ Date
2021.01.13**Customer Approval****Approved by / Date****Company Name****Change Table**

Revision No.	Change History
13.	1.Change Logo from "TSI@" to "TSI" and name. 2.Add "customer" Approval.
14.	Change test method of "Mercury" from "USP<851>" to "USP<852>". Approved date: Apr. 6, 2012
15.	1.Change the test method of "Heavy metals" from "USP<231>" to "Ph. Eur. <2.4.8>". 2.Change the test method of "Electrophoretic purity" from "USP<726>" to "USP monograph". 3.Revise the description of storage condition from " stored in unopened drums under optimal conditions" to " stored in unopened containers under ambient temperature conditions". Approved date: Dec.27,2016
16.	Change the method of "Mercury" from "USP<852>" to "USP<852> / USP<730>". Approved date: March 28, 2018
17.	Change the company logo and website information. Approved date: Mar.19, 2020

The information presented herein is based on our best knowledge and believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. TSI Group, shall not be held liable for any damage resulting from handling or from contact with the specified product.

©2020 TSI Group Ltd. All rights reserved

www.tsigroupltd.com

Building #54, 5/F, 1089 Qinzhou Rd. (N), Shanghai, China 200233 +86 21 64950900 Tel +86 21 64951094 Fax