



**CERTIFICATE OF ANALYSIS**

Report NO.:FR180730



**D-Glucosamine HCl**

<b>Item No.</b>	GLH503	<b>Mfg Date</b>	2018-04-23
<b>Batch No.</b>	GLH201804043	<b>Retest Date:</b>	2021-04-22

	Item	Method	Specification	Result
<b>Physical Properties</b>	Appearance	Visual	White or almost white, crystalline powder	Complies
	Particle Size	Ro Tap	NLT 95% through USS#40 ( 425 micron)	100%
<b>Analytical</b>	D-Glucosamine HCl	HPLC	98.0-102.0% (odb)	99.7%
	Identification			
	-A	USP<197k>	IR complies with standard	Complies
	-B	USP<191>	Meets the requirements for Chloride	Complies
	-C	HPLC	The retention time of sample corresponds to standard under assay testing.	Complies
	Residue on Ignition	USP<281>	NMT 0.1%	0.06%
	Sulfate	USP<221>	NMT 0.24%	<0.24%
	Heavy metals	USP<231,Method II>	NMT 10 ppm	<10 ppm
	Arsenic (As)	USP<211,Method II>	NMT 3 ppm	<3 ppm
	Specific rotation	USP<781S>	+70.0°- +73.0°	+72.3°
	Ph (2% solution)	USP<791>	3.0-5.0	4.5
	Loss on Drying	USP<731>	NMT 1.0%	0.05%
<b>Microbial</b>	Total aerobic	USP<2021>	NMT1000 cfu/g	<10 cfu/g
	Yeast & Mold	USP<2021>	NMT 100 cfu/g	<10 cfu/g
	E. coli	USP<2022>	Negative in 10 g	Negative
	Salmonella	USP<2022>	Negative in 25 g	Negative

Prepared by

Approved by  Date 2018-05-15

Quality Manager