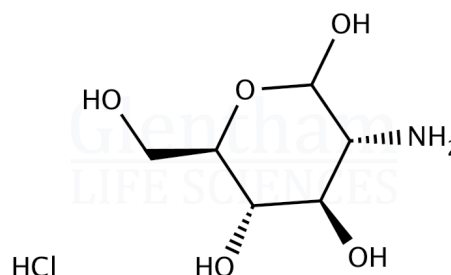


Certificate of Analysis

Product Name	D-Glucosamine hydrochloride, USP grade
Glentham Code	GC4951
CAS Number	66-84-2
EINECS	200-638-1
MDL Number	MFCD00135831
Additional CAS	3416-24-8
Batch Number	692PPR
Molecular Weight	215.64
Molecular Formula	$C_6H_{13}NO_5 \cdot HCl$
Storage Temp.	+20°C



Property	Specification	Batch 692PPR
Physical Description	White crystalline powder	White crystalline powder
Identification	A, B, C according to USP	Conforms
Specific Optical Rotation	+70.0 - +73.0 ° (c=2.5)	+72.38 °
pH (2% in water)	3.0 - 5.0	4.23
Residue on Ignition	≤ 0.1%	0.07%
Chloride	16.2 - 16.7 %	16.6%
Sulfate	≤ 0.24%	≤ 0.24%
Heavy Metals (as Pb)	≤ 10ppm	≤ 10ppm
Arsenic (As)	≤ 3ppm	≤ 1ppm
Loss on Drying	≤ 0.5%	0.09%
Assay	98.0 - 102.0 % (dried basis)	98.7%
Pharmacopoeia Specification(s)	USP	Conforms

Specification Version	v1.0
Manufacture Date	2020-01-06
Re-Test Date	2030-10-27

Glentham Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check www.glentham.com or contact us using the details above for the current version of this document.

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