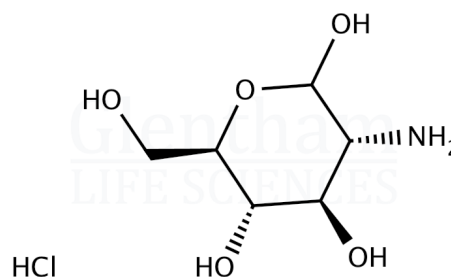


## Certificate of Analysis

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](http://www.glentham.com) or contact us using the details above for the current version of this document.

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