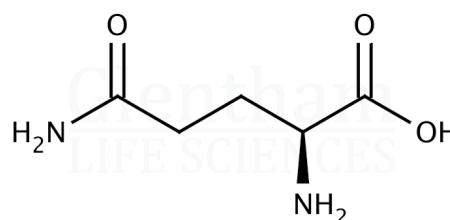


## Certificate of Analysis

Product Name	L-Glutamine, GlenCell™, suitable for cell culture
Glenthams Code	GM8887
CAS Number	56-85-9
EINECS	200-292-1
MDL Number	MFCD00008044
Batch Number	712DNB

Molecular Weight	146.15
Molecular Formula	C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>3</sub>
Storage Temp.	+20°C



Property	Specification	Batch 712DNB
Physical Description	White crystals or crystalline powder	White crystalline powder
Identification	To pass test	Conforms
Solubility	Freely soluble in formic acid, soluble in water, practically insoluble in ethanol	Conforms
Solubility (2.5% in water)	Clear, colourless solution	Conforms
Transmittance	≥ 98.0%	99.2%
Specific Optical Rotation	+6.3 - +7.3 °	+6.3°
pH	4.5 - 6.0	5.4
Iron (Fe)	≤ 10ppm	Conforms
Heavy Metals (as Pb)	≤ 5ppm	Conforms
Arsenic (As2O3)	≤ 1ppm	≤ 0.1ppm
Related Substances	≤ 0.5%	Conforms
Loss on Drying	≤ 0.2%	0.03%
Sulphated Ash	≤ 0.1%	0.02%
Chloride (Cl)	≤ 0.02%	Conforms
Sulphate (SO4)	≤ 0.02%	Conforms
Endotoxins	≤ 50EU/g	≤ 40Eu/g
Assay	99.0 - 101.0 % (dried basis)	100.0%
Origin	Non-animal origin	Conforms
Pharmacopoeia Specification(s)	EP, USP	Conforms

Specification Version	v1.0
Manufacture Date	2021-10-29
Re-Test Date	2029-01-14

Glenthams Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check [www.glenthams.com](http://www.glenthams.com) or contact us using the details above for the current version of this document.

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