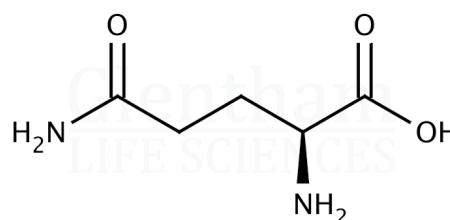


Certificate of Analysis

Product Name	L-Glutamine, USP grade, non-animal origin
Glenthams Code	GM2001
CAS Number	56-85-9
EINECS	200-292-1
MDL Number	MFCD00008044
Batch Number	897FOK

Molecular Weight	146.15
Molecular Formula	$C_5H_{10}N_2O_3$
Storage Temp.	+20°C



Property	Specification	Batch 897FOK
Physical Description	White powder	Conforms
Identification (IR)	To conform to standard	Conforms
Solubility (2.5% in water)	Clear, colourless solution	Conforms
Specific Optical Rotation ($[\alpha]_{20/D}$)	+6.3 - +7.3 °	+6.5°
Iron (Fe)	≤ 10ppm	Conforms
Heavy Metals	≤ 10ppm	Conforms
Chloride	≤ 0.05%	≤ 0.02%
Sulphate	≤ 0.03%	≤ 0.02%
Residue on Ignition	≤ 0.1%	0.04%
Loss on Drying	≤ 0.3% (105°C, 3h)	0.02%
Assay	99.0 - 101.0 % (dried basis)	99.6%
Pharmacopoeia Specification(s)	USP	Conforms
Origin	Fermentation from microbial source (non-animal origin)	Conforms

Specification Version	v1.0
Manufacture Date	2021-01-27
Re-Test Date	2030-06-20

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 or contact us using the details above for the current version of this document.

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