

**CERTIFICATE OF ANALYSIS**

Product Name: L-Glutamine  
 CAS NO.: 56-85-9  
 Batch No.: 18/MFM/2168  
 Molecular Weight: 146.15 g/mol  
 Expiry Date: August 2023  
 Storage Temp: + 20°C

TESTS	SPECS	RESULTS
Purity (HPLC)	98.5 – 101.5%.	98.8%
Description	White or almost white crystalline powder	Conforms
Identification	IR	Conforms
Specific optical rotation	+ 6.3° - + 7.3°	+ 6.67°
Residue on ignition	<= 0.1%	0.08%
Loss on Drying	<= 0.3%	0.22%
Lead (Pb)	<= 3ppm	Conforms
Arsenic (As)	<= 1ppm	Conforms
Cadmium (Cd)	<= 1ppm	Conforms
Mercury (Hg)	<= 0.1ppm	Conforms

For and on behalf of  
**FORMEDIUM Ltd, Unit 1B**  
 Hunstanton Commercial Park  
 PE36 5JQ, England

*[Signature]*  
 (Authorised Signature)

\* This material is supplied for laboratory use only.

Supplier: Formedium Ltd

Approved by:

*[Signature]*

Date:

01 Nov 2018