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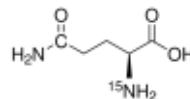
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Certificate of Analysis

Product Name:

L-Glutamine-(amine-¹⁵N) - 98 atom % ¹⁵N

Product Number: 486809
Batch Number: MBBB2577V
Brand: ALDRICH
CAS Number: 80143-57-3
MDL Number: MFCD00084215
Formula: C₅H₁₀¹⁵NNO₃
Formula Weight: 147.14 g/mol
Quality Release Date: 21 APR 2014



Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder	Powder
Purity (HPLC)	≥ 99.0 %	101.0 %
Chiral Purity	≤ 1.0 %	0.1 %
Proton NMR Spectrum	Conforms	Conforms
Carbon NMR Spectrum	Conforms	Conforms
¹⁵ N Enrichment	≥ 98.0 %	98.9 %
Water (by Karl Fischer)	≤ 0.5 %	0.0 %

Sudhakar Parthasarathy, Scientist

Quality Control

Miamisburg, Ohio US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.