



CERTIFICATE OF ANALYSIS

Amino Acids Calibration Standard - Acidics and Neutrals For Lithium Systems 1700-0180

Product: Amino Acids Calibration Standard - acidics and neutrals

Part Number: 1700-0180

Lot Number: 404001

Production Date: 02 Apr 2014

Expiration Date: 02 Apr 2017

Primary Application: This calibration standard is a solution of 27 amino acids in 0.1N Hydrochloric acid. This calibration standard is intended to be used for calibration of chromatographic instrumentation for determination of amino acids.

Acceptance Criteria: The concentrations for 27 amino acids are within $\pm 4\%$ of those stated below. These values are based on the results of HPLC analysis using certified NIST amino acids standard and Sigma amino acids standard.

Compound	Concentrations $\mu\text{M}/\text{mL}$
β -Alanine	2.5
L-Alanine	2.5
D,L- α -amino-adipic acid	2.5
L-2-Amino-n-butyric acid	2.5
D,L- β -Amino- <i>i</i> -butyric acid	2.5
L-Asparagine	2.5
L-Aspartic acid	2.5
Citrulline	2.5
L-Cystathionine	2.5
L-Cystine	1.25
L-Glutamic acid	2.5
Glycine	2.5
4-trans-L-Hydroxyproline	2.5
L-Isoleucine	2.5
L-Leucine	2.5
L-Methionine	2.5
L-Phenylalanine	2.5
<i>o</i> -Phosphoethanolamine	2.5
<i>o</i> -Phospho-L-serine	2.5
L-Proline	2.5

Sarcosine	2.5
L-Serine	2.5
Taurine	2.5
L-Threonine	2.5
L-Tyrosine	2.5
Urea	2.5
L-Valine	2.5

Storage Conditions: Keep frozen

Analysis Certified by: Jim Murphy **Date:** 05 May 2014
President
Title