



CERTIFICATE OF ANALYSIS

Sodium Calibration Standard for Oxidized Feed Hydrolysate 1700-0155

Product: Oxidized Feed Hydrolysate Standard

Part Number: 1700-0155

Lot Number: 311027

Production Date: 26 Nov 2013

Expiration Date: 26 Nov 2016

Primary Application: This calibration standard is a solution of 16 amino acids and ammonia in 0.27 N lithium citrate buffer, pH 2.36. This calibration standard is intended to be used for calibration of chromatographic instrumentation for determination of amino acids.

Acceptance Criteria: The concentrations for 16 amino acids and ammonia 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 $\mu\text{M/mL}$
L-Alanine	0.25
Ammonia	0.25
L-Arginine	0.25
L-Aspartic acid	0.25
L-Cysteic acid	0.25
L-Glutamic acid	0.25
Glycine	0.25
L-Histidine	0.25
L-Isoleucine	0.25
L-Leucine	0.25
L-Lysine	0.25
L-Methionine-D,L sulfone	0.25
L-Phenylalanine	0.25
L-Proline	0.25
L-Serine	0.25
L-Threonine	0.25
L-Valine	0.25

Storage Conditions: Keep frozen

Analysis Certified by: Jim Murphy
President

Title

Date: 18 Dec 2013