



CERTIFICATE OF ANALYSIS

Sodium Calibration Standard For Protein Hydrolysate 012506H

Product: Protein Hydrolysate Standard in Sodium Citrate Buffer

Part Number: 012506H

Lot Number: 908052

Production Date: 30 Sept 2019

Expiration Date: 29 Sept 2022

Primary Application: This calibration standard is a solution of 18 amino acids and ammonia in 0.27 N sodium citrate buffer, pH 2.2. This calibration standard is intended to be used for calibration of chromatographic instrumentation for determination of amino acids.

Acceptance Criteria: The concentrations for 18 amino acids and ammonia are within $\pm 4\%$ of those stated below. These values are based on the results of HPLC analysis using certified Sigma amino acids standard and QC certified lot of 012506H.

Compound	Concentrations $\mu\text{M}/\text{mL}$
L-Alanine	0.25
Ammonia	0.25
L-Arginine	0.25
L-Aspartic acid	0.25
L-Cystine	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	0.25
L-Phenylalanine	0.25
L-Proline	0.25
L-Serine	0.25
L-Threonine	0.25
L-Tryptophan	0.25
L-Tyrosine	0.25
L-Valine	0.25

Storage Conditions: Keep frozen

Analysis Certified by: Jim Murphy
President

Date: November 13, 2019

Title

Rev. C, 12/21/2017