Agilent Technologies

Fluka Analytical

Certificate of Analysis

Description : Amino Acid Standard (1 nmol/µl) 10/pk

Part.-No. : 5061-3330 Production date : 04-Nov 2008

Lot-No. : 1415062 (99412) Expiration date : 04-Nov 2010

No.	Component	Molecular Weight	Final Concentration (mg/ml)
01	**L-Alanine**	89.10	0.08910
02	**L-Arginine**	174.20	0.17420
03	**L-Aspartic Acid**	133.11	0.13311
04	**L-Cystine**	240.30	0.24030
05	**L-Glutamic Acid**	147.13	0.14713
06	**Glycine**	75.07	0.07507
07	**L-Histidine Hydrochloride Monohydrate**	209.63	0.20963
08	**L-Isoleucine**	131.18	0.13118
09	**L-Leucine**	131.18	0.13118
10	**L-Lysine Hydrochloride**	182.65	0.18265
11	**L-Methionine**	149.21	0.14921
12	**L-Phenylalanine**	165.19	0.16519
13	**L-Proline**	115.13	0.11513
14	**L-Serine**	105.09	0.10509
15	**L-Threonine**	119.12	0.11912
16	**L-Tyrosine**	181.19	0.18119
17	**L-Valine**	117.15	0.11715

Purity Determination:
Amino acids by Titration, Loss on drying, Residue on ignition, IR-Spectroscopy, MicroSelect-Test, Trace Metal and Trace Anion Determination
Hydrochloric acid by Titration, MicroSelect-Test, Trace Metal and Trace Anion Determination

Raw materials
All raw materials used to prepare this amino acid standard are of the highest available purity (> 99%) and are routinely analyzed according to the above-mentioned purity-determinations.

Manufacturing
We employ precise measuring techniques in manufacturing this amino acid standard. Mass is determined with electronic balances capable of weighing to 0.0001 g and calibrated by the Swiss Office of Weights and Measures. Volume ist determined in dedicated high-purity borosilicate volumetric flasks capable of measuring a 2000 ml-volume with an accuracy of 0.3%.

Packaging and Storage

The final solution is handled under argon, filled into 1 ml amber ampoules under inert gas (argon) and sealed. 10 finished ampoules are packaged into a set and stored at 4 °C.

Stability

Every individual lot of the product is subjected to reanalysis and the experience allows to set the shelf life to two years, if the product is stored as received at 4 °C. The guaranteed stability is not applicable to ampoules stored after opening, even if resealed.

Analytical Quality Control

The scope of the analytical testing procedures covers identity, purity, homogeneity, accuracy, function test in amino acid analysis and stability of the finished product

Description	Lot Analysis	Specifications
Aspect	clear, colorless liquid	clear, colorless liquid
Density (20/4)	1.000	1.00 ± 0.01 g/ml
Index of Refraction (20/D)	1.336	1.334 ± 0.005
Amino Acid Analysis :	corresponds	corresponds
- Identity	corresponds	corresponds
- Purity	corresponds	corresponds
- Concentration Accuracy	corresponds	± 2.5% relative to primary standard

Buchs, 12.11.2009

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