

AMINO ACIDS, INC.
L-TRYPTOPHAN SIGNATURE™*

Certificate of Analysis

Item Name	L-Tryptophan	CAS#73-22-3	Date 11/1/2007
Lot Number	2007092202		
Manufacturing Date	9/22/2007		Manufactured under Exclusive
Retest Date	9/21/2009		License for Amino Acids, Inc.

Item	Specifications (USP29)		Results
Specific Rotation at 20C	-29.4° ~ -32.8°		-31.4°
pH	5.5 ~ 7.0		5.8
State of Solution	≥95.0%		97.0%
Chloride (Cl)	≤0.05%		<0.020%
Ammonium (NH4)	≤0.020%		<0.020%
Sulfate (SO4)	≤0.03%		<0.020%
Iron (Fe)	≤0.003%		<0.002%
Heavy Metals (Pb)	≤15ppm		<10ppm
Arsenic (As2O3)	≤1ppm		<1ppm
Foreign amino acids	≤0.5%		<0.5%
Loss on Drying	≤0.30%		0.11%
Residue on Ignition	≤0.10%		0.09%
Organic Volatile Impurities	Meet the requirements		Meet the requirements
Assay Titration	100.1	98.5%	99.1%
Assay HPLC	≥98.5		99.6
EBT (Peak E) by HPLC**	ND		ND(<10ppm)
Endotoxin*	Less than 6.0EU/g		Less than 6.0EU/g
Yeast and Mold	Less than 10 CFU/g		Less than 10 CFU/g
Coliform	Less than 10 CFU/g		Less than 10CFU/g
Aerobic Plate Count	Less than 10 CFU/g		Less than 10CFU/g
Salmonella	Negative per 5 grams		Negative per 5 grams
E. coli	Less than 10 CFU/g		Less than 10CFU/g
Melamine(GC/MS)	ND		ND(<1.0ppm)

This material is certified for Arsenic not more than 1 ppm.

This material conforms to **USP29**, **EP** and **JP** specifications.

This Material conforms to **FCC (5th ed.)** specifications (Lead NMT 5ppm)

This is to certify that the information listed above is a true and accurate copy of the data obtained for this raw material.

*Endotoxin Reference standard used for these results USP Reference Standard #G3E069.

**On File HPLC according to procedure, Arch. Enviro. Contam. Toxicol .25,134-142 (1993)

The above information is a direct translation of the information provided to **Amino Acids, Inc.**, from the manufacturer of this product. This Certificate of Analysis should be used for information purposes and is not intended as a substitute for strict quality control analysis by the purchaser of this product.

***L-Tryptophan Signature™** is a Registered Trade Mark of **Amino Acids, Inc.**