

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2026-03-16 17:07:33

Date of Next Testing: 2029-03-15 17:07:33

Product Name: **L-Tryptophan**

CAS Number: 73-22-3

Specifications & Purity: PharmPure™,USP,JP,BP,Ph.Eur.

Lot #: GMC2613137

SKU #: **L774650**

Version: **3**

Analysis #: **674215**

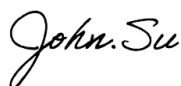
Storage Temperature: Protected from light,Room temperature

Parameter	Limit Values	Result
Assay(Perchloric acid titration, calc. on anhydrous substance)	98.5-101 (%)	99.41000 %
Specific Rotation [α] ₂₀ /D(c=1 in H ₂ O)(calcd.on anh.substance)	-33~-30 (°)	-31.11000 °
Specific Rotation [α] ₂₅ /D(C=1 in H ₂ O, calc. on dried substanc)	-32.8~-29.4 (°)	-31.42000 °
pH(10 g/l,CO ₂ -free water)	5.5-6.4	5.70000
Ninhydrin-positive substances(LC)(any ninhydrin-positive impurity)	0-0.2 (%)	0.00000 %
Ninhydrin-positive substances(LC)(ammonium(570nm)	0-0.02 (%)	0.00000 %
Ninhydrin-positive substances(LC)(total impurities)	0-0.5 (%)	0.00000 %
Impurity A((1,1'-ethylidenebistryptophan)	0-10 (ppm)	0.00000 ppm
Sum of impurities with RT < tryptophan-peak	0-100 (ppm)	14.00000 ppm
Sum of impurities with RT > tryptophan-peak and up to 1,8 times the RT of acetyltryptophan	0-300 (ppm)	21.00000 ppm
Chloride(Cl)	0-200 (ppm)	32.05362 ppm
Sulfate(SO ₄)	0-280 (ppm)	85.63152 ppm
Heavy metals	0-20 (ppm)	0.00000 ppm
Fe(Iron)	0-20 (ppm)	0.00000 ppm
Arsenic(As)	0-2 (ppm)	0.00000 ppm
loss on drying(105°C,3 h)	0-0.3 (%)	0.14000 %
Residue on Ignition	0-0.1 (%)	0.02000 %
Other amino acids (TLC)	0-0.5 (%)	0.00000 %
Transmittance of Solution (25 g/l, Hydrochloric Acid 2 mol/l)	95-100 (%)	99.98400 %
Bacterial endotoxins	0-10 (IU/g OR u/g)	4.15000 IU/g OR u/g
Microbiological test(total aerobic microbial count(TAMC))	0-100 (CFU/g)	0.00000 cfu/g
Microbiological test(total yeast and mould count(TYMC))	0-100 (CFU/g)	0.00000 cfu/g
Ethanol	< 5000 (ppm)	0.00000 ppm

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Parameter	Limit Values	Result
Appearance(L774650)	White or almost white, crystalline or amorphous powder	White or almost white, crystalline or amorphous powder
Solubility : sparingly soluble in water, slightly soluble in ethanol (96 per cent). It dissolves in dilute solutions of mineral acids and alkali hydroxides	Pass	Pass
Identity (IR-spectrum)	conforms	Conforms
Identity(specific rotation)	Pass	Pass
Identity(TLC)	Passes test	Passes test
Identify(EP)(D)	Pass	Pass
Appearance of solution(10 g/l, 1M HCl),clear and not more intense in color than reference solution BY6	Pass	Pass
Related substances (HPLC)	Passes test	Passes test
Related substances(TLC)	passes test	Passes test
Residual solvents (ICH (Q3C))excluded by manufacturing process	pass	Pass



John Su
QA & QC Manager