

CERTIFICATE OF ANALYSIS

PRODUCT NAME. L-Tryptophan
 BATCH NO. 18/MFM/2212
 MOLECULAR WEIGHT: 204.23
 CAS NUMBER: 73-22-3
 EXPIRY DATE: March 2023
 MOLECULAR FORMULA: C₁₁H₁₂N₂O₂
 STORAGE TEMP: + 20°C

TESTS	SPECS	RESULTS
Appearance	White to off-white powder	Off-white powder
Assay :	>= 99.0%	99.5%
pH (1% solution)	5.5 – 7.0	5.9
Specific optical rotation	-29.4° - -32.8°	-30.5°
Chloride	<=0.05%	Conforms
Sulphate	<=0.03%	Conforms
Iron	<= 30 ppm	5 ppm
Arsenic (As)	<.1 ppm	Conforms
Heavy metals	<=15 ppm	9 ppm
Mercury (Hg)	<= 0.1 ppm	Conforms
Lead (Pb)	<= 3 ppm	Conforms
Cadmium (Cd)	<= 1 ppm	Conforms
Loss on Drying	<=0.3%	0.14%
Residue on ignition	<=0.1%	Conforms
Pharmacopoeia Specification(s)	USP	Conforms to USP32

* This material is supplied for laboratory use only.

Supplier: Formedium Ltd

Approved by:

[Signature]
 For and on behalf of
 FORMEDIUM Ltd, Unit 1B
 Hunstanton Commercial Park
 PE36 5JQ England
 Date: 12 OCT 2018

 (Authorised Signature)