

## Certificate of Analysis

**Product Name:** L-TRYPTOPHAN  
*BioUltra*

**Product Number:** 99981

**Batch Number:** BCBB7661

**Brand:** Fluka

**CAS Number:** 73-22-3

**Formula:** C<sub>11</sub>H<sub>12</sub>N<sub>2</sub>O<sub>2</sub>

**Formula Weight:** 204.23

**Quality Release Date:** 28 JAN 2010

**Date retested:** 28 AUG 2013

**Recommended Retest Date:** AUG 2017

TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	WHITE/COLORLESS	WHITE
APPEARANCE (FORM)	POWDER TO FINE CRYSTALS	FINE CRYSTALS
TITRATION (NT) HClO <sub>4</sub> 0.1M	99.5 - 100.5 %	99.6 %
SPECIFIC ROTATION (20/D)	-31.5 ± 1.0 DEGREES	-31.2 DEGREES
CONCENTRATION	--	C=1 IN H <sub>2</sub> O
MELTING POINT (DEC.)	280 - 290 C	284 C
LOSS ON DRYING	≤ 0.1 %	0.06 %
SULFATED ASH	≤ 0.1 %	<0.05%
CARBON CONTENT	64.69 % (THEORY)	64.68 %
HYDROGEN CONTENT	5.92 % (THEORY)	5.84 %
NITROGEN CONTENT	13.72 % (THEORY)	13.66 %
INFRARED SPECTRUM	CONFORMS TO STRUCTURE	CONFORMS
METAL TRACE ANALYSIS (ICP)	CORRESPONDS TO REQUIREMENTS	PASSED
ALUMINIUM (ICP)	≤ 5 MG/KG	< 5 MG/KG
BARIUM (ICP)	≤ 5 MG/KG	< 5 MG/KG
BISMUTH (ICP)	≤ 5 MG/KG	< 5 MG/KG
CALCIUM (ICP)	≤ 10 MG/KG	< 10 MG/KG
CADMIUM (ICP)	≤ 5 MG/KG	< 5 MG/KG
COBALT (ICP)	≤ 5 MG/KG	< 5 MG/KG
CHROMIUM (ICP)	≤ 5 MG/KG	< 5 MG/KG
COPPER (ICP)	≤ 5 MG/KG	< 5 MG/KG
IRON (ICP)	≤ 5 MG/KG	< 5 MG/KG
POTASSIUM (ICP)	≤ 50 MG/KG	< 50 MG/KG
LITHIUM (ICP)	≤ 5 MG/KG	< 5 MG/KG
MAGNESIUM (ICP)	≤ 5 MG/KG	< 5 MG/KG

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<b>MANGANESE (ICP)</b>	≤ 5 MG/KG	< 5 MG/KG
<b>MOLYBDENUM (ICP)</b>	≤ 5 MG/KG	< 5 MG/KG
<b>SODIUM (ICP)</b>	≤ 50 MG/KG	< 50 MG/KG
<b>NICKEL (ICP)</b>	≤ 5 MG/KG	< 5 MG/KG
<b>LEAD (ICP)</b>	≤ 5 MG/KG	< 5 MG/KG
<b>STRONTIUM (ICP)</b>	≤ 5 MG/KG	< 5 MG/KG
<b>ZINC (ICP)</b>	≤ 5 MG/KG	< 5 MG/KG
<b>ARSENIC TRACES (MHS-AAS)</b>	≤ 0.1 MG/KG	<0.05MG/KG
<b>TOTAL SULFUR AS SO4 (ICP)</b>	≤ 50 MG/KG	< 50 MG/KG
<b>CHLORIDE (CL)</b>	≤ 50 MG/KG	< 50MG/KG
<b>SOLUBILITY (METHOD)</b>	--	3.065 G IN 30 ML 0.5M HCL (0.5 M)
<b>APPEARANCE (SOLUTION)</b>	CLEAR, COLORLESS TO FAINTLY YELLOW	CLEAR, VERY FAINTLY YELLOW
<b>RESIDUE (FILTER TEST)</b>	CORRESPONDS	CORRESPONDS
<b>CUT-OFF</b>	≤326 NM	308.0 NM



Dr. Claudia Geitner  
 Manager Quality Control  
 Buchs, Switzerland

Sigma-Aldrich warrants that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.