

## Certificate of Analysis

**Product Name:** L-ASPARAGINE  
*BioUltra*

**Product Number:** 99979

**Batch Number:** BCBQ3463V

**Brand:** Sigma-Aldrich

**CAS Number:**

**Formula:**

**Formula Weight:**

**Quality Release Date:** 07 JUL 2015

**Recommended Retest Date:** MAY 2019

TEST	SPECIFICATION	RESULT
APPEARANCE (COLOR)	COLORLESS OR WHITE	WHITE
APPEARANCE (FORM)	POWDER OR CRYSTALS	POWDER
TITRATION (NT) HClO <sub>4</sub> 0.1M	99.5 - 100.5 %	99.8 %
PURITY (TLC AREA %)	≥ 99.0 %	100.0 %
SPECIFIC ROTATION (20/D)	35.0 ± 0.5 DEGREES	35.1 DEGREES
CONCENTRATION	C=5 IN HYDROCHLORIC ACID 5M	C=5 IN HYDROCHLORIC ACID 5M
LOSS ON DRYING	≤ 0.1 %	< 0.05 %
RESIDUE ON IGNITION	≤ 0.05 %	< 0.05 %
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)	≤ 50 MG/KG	< 50 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)	≤ 50 MG/KG	< 50 MG/KG
MANGANESE (ICP)	≤ 5 MG/KG	< 5 MG/KG
MOLYBDENUM (ICP)	≤ 5 MG/KG	< 5 MG/KG
SODIUM (ICP)	≤ 50 MG/KG	< 50 MG/KG

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<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	< 0.1 MG/KG
<b>TOTAL SULFUR AS SO<sub>4</sub> (ICP)</b>	≤ 100 MG/KG	< 100 MG/KG
<b>CHLORIDE (CL)</b>	≤ 50 MG/KG	< 50 MG/KG
<b>SOLUBILITY (METHOD)</b>	0.396 G IN 30 ML H <sub>2</sub> O (0.1 M)	0.396 G IN 30 ML H <sub>2</sub> O (0.1 M)
<b>APPEARANCE (SOLUTION)</b>	CLEAR COLORLESS	CLEAR COLORLESS
<b>PH (SOLUTION)</b>	4.0 - 5.5	5.2
<b>RESIDUE (FILTER TEST)</b>	NO RESIDUE	NO RESIDUE
<b>UV - ABS. AT 260 NM</b>	≤ 0.07	0.002
<b>UV - ABS. AT 280 NM</b>	≤ 0.06	0.001



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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.