

## Certificate of Analysis

### (Representative Sample Certificate)

**Product Name:** L-Arginine  
**INCI Name:** Arginine  
**CAS Number:** 74-79-3  
**Lot Number:** Not available (data may vary slightly with different lots or batches)  
**Expiration Date:** 36 months from production date

Property	Specification	Analysis
Appearance (Visual)	White crystals or crystalline powder	Pass
Identification (FCC/USP<197K>)	Conforms to standard	Pass
Assay (FCC/USP)	98.5 -101.5%	99.30%
Specific rotation $[D]^{20}_D$ (FCC/USP<781S>)	+26.0 - +27.9°	+27.15°
Specific rotation $[D]^{25}_D$ (FCC/USP<781S>))	+26.3 - +27.7°	+26.88°
pH (ph meter)	10.5 - 12.0	11.21
Loss on drying (FCC/USP<731>)	NMT 0.5%	0.14%
Residue on ignition (FCC/USP<281>)	NMT 0.2%	0.03%
Arsenic (Arsenic limit test)	NMT 1.5 ppm	Pass
Heavy metals (as Pb) (USP<231> Method I)	NMT 15 ppm	Pass
Lead	NMT 5 ppm	Pass

**Disclaimer:** This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to be the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy themselves as to the suitability & completeness of such information for their own particular use.

(FCC)		
Iron (USP<241>)	NMT 30 ppm	Pass
Chloride (USP<221>)	NMT 0.05%	Pass
Sulfate (USP<221>)	NMT 0.03%	Pass
Insoluble foreign matter (FCC)	NMT 5mm of Fibers	Pass
Insoluble foreign matter (FCC)	NMT 5mg/100g of weight	Pass
Organic impurities (USP<621>)	NMT 0.5% (individual impurity)	Pass
Organic impurities (USP<621>)	NMT 2.0% (total impurities)	Pass
Total aerobic bacteria (FDA-BAM)	NMT 1,000 cfu/g	ND
Yeast & Mold (FDA-BAM)	NMT 100 cfu/g	ND
Coliforms (FDA-BAM)	Negative/g	Pass
E. Coli (FDA-BAM)	Negative/10g	Pass
Salmonella	Negative/25g	Pass

The above data was obtained using the test indicated and is subject to the deviation inherent in the test method. Results may vary under other test methods or conditions.

This report is not to be signed. All data are as per our supplier.

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