

Certificate of Analysis

Product Name: **L-Citrulline DL-Malate (2:1)**
 CAS #: **54940-97-5**
 Country of Origin: **China**
 Batch Number: **Varies**
 Manufacture Date: **Varies**
 Retest Date: **Varies**

Test Results Obtained by PureBulk

ITEMS	SPECIFICATIONS	RESULTS
L-Citrulline DL-Malate (HPLC)	≥98%	98.98%
L-Citrulline DL-Malate <Identification> (HPLC)	Positive	Positive <Conforms> The retention time of the major peak of the sample corresponds to that of the standard solution ± 10% as obtained in the assay.
L-Citrulline (HPLC)	Report Only	70.32%
DL-Malic Acid (HPLC)	Report Only	28.66%
Aerobic Plate Count	≤1000 cfu/g	<20 cfu/g
Coliforms	≤100 cfu/g	<20 cfu/g
<i>E. Coli</i>	Negative	Absent
<i>Staph aureus</i>	Negative	Absent
Yeast & Mold	≤100 cfu/g	<20 cfu/g
<i>Salmonella</i>	Negative	Absent
<i>Pseudo. aeruginosa</i>	Negative	Absent
Conclusion (PureBulk):	This product conforms to standards	

The following information is an indirect translation of information provided from the Manufacturer's Certificate of Analysis, and should not be used solely as an instrument for strict quality control.

ITEMS	SPECIFICATIONS	RESULTS
Description	White Crystals or Crystalline Powder	Conforms
Specific Rotation $[\alpha]_D^{20}$	+16.5 to 18.5° (8 g/100ml, 6N HCl)	+17.6°
State of Solution (Transmittance)	≥98.0%	99.4%
Chloride (Cl)	≤0.05%	<0.05%
Ammonium (NH ₄)	≤0.02%	<0.02%
Sulfate (SO ₄)	≤0.020%	<0.020%
Iron (Fe)	≤10 ppm	<10 ppm
Heavy Metals	≤10 ppm	<10 ppm
Lead (Pb)	≤3 ppm	<3 ppm
Arsenic (As)	≤1 ppm	<1 ppm
Cadmium (Cd)	≤1 ppm	<1 ppm
Mercury (Hg)	≤0.1 ppm	<0.1 ppm
Loss on Drying	≤0.3%	0.16%
Residue on Ignition (sulfated)	≤0.1%	0.04%
Particle Size	Report Only	100% pass 20 mesh 100% pass 40 mesh 70% pass 80 mesh
Bulk Density	Report Only	0.44 g/ml
Tapped Density	Report Only	0.68 g/ml
Conclusion (Manufacturer):	This product conforms to enterprise standards	

Additional Information: Non-Allergen || Gluten-Free || BSE/TSE Free || Vegan

Composition: L-Citrulline 66.67%
DL-Malate 33.33%

GMO Statement Non-GMO

Storage Conditions: **Keep in sealed container under 25°C.**
Keep away from strong light, heat and moisture.

Purebulk.Inc verifies that the information contained herein is true and correct to the best of our knowledge.

Verified By: Nicole Rammage / Ann Foote / Candace Gibson

(This document was produced electronically and is valid without signature.)