

## Certificate of Analysis

Product Name: **L-Tyrosine**  
 CAS #: **60-18-4**  
 Molecular Formula: **C<sub>9</sub>H<sub>11</sub>NO<sub>3</sub>**  
 Molecular Weight: **181.19**  
 Starting Material: **Glucose (Non-GMO Corn)**  
 Carrier/Excipients: **None**  
 Solvents: **None**  
 Country of Origin: **China**  
 Batch Number: **Varies**  
 Manufacture Date: **Varies**  
 Retest Date: **Varies**

## Test Results Obtained by PureBulk

ITEMS	SPECIFICATIONS	RESULTS
L-Tyrosine (HPLC)	98.5-101.5%	101.05%
L-Tyrosine <Identification> (HPLC)	Positive	Conforms/Positive Sample peak retention time compares positively to standard peak retention times within ± 10%
Aerobic Plate Count	≤1000 cfu/g	<20 cfu/g
Coliforms	≤100 cfu/g	<20 cfu/g
<i>E. Coli</i>	Not Detected/25g	Absent
<i>Staph aureus</i>	Not Detected/25g	Absent
Yeast & Mold	≤100 cfu/g	<20 cfu/g
<i>Salmonella</i>	Not Detected/25g	Absent
<i>Pseudo. aeruginosa</i>	Not Detected	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
Appearance	White crystals or crystalline powder	White crystalline powder
Specific Rotation [α] <sub>D</sub> <sup>25</sup>	-9.8° ~ -11.2°	-10.0°
Chlorides	≤400 ppm	<400 ppm
Sulfates	≤400 ppm	<400 ppm
Iron	≤30 ppm	<15 ppm
Lead	<3 ppm	<3 ppm
Cadmium	<1 ppm	<1 ppm
Mercury	<0.1 ppm	<0.1 ppm
Heavy Metals	≤15 ppm	<15 ppm
Arsenic	≤1.5 ppm	<1.5 ppm
Loss on Drying	≤0.30%	0.12%
Residue on Ignition	≤0.40%	0.07%
Single Impurity	≤0.5%	<0.5%
Total Impurities	≤2.0%	<1.0%
Conclusion (Manufacturer):	This product conforms to USP39 standards	

**Additional Information:** Allergen Free || BSE/TSE Free || Gluten-Free || Melamine Free ||  
**Sterilization Method:** Non-ETO || Non-Irradiation  
**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: Candace Gibson / Nicole Rammage

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