



Qingdao Free Trade Zone United International Co., Ltd.

18F, Huaren International Building,  
2A Shandong Road, Qingdao, China 266071

Tel: +86-532-83893699; 83891505~09

Fax: +86-532-83893695

Email: info@unitedint.com

http://www.unitedint.com

## CERTIFICATE OF ANALYSIS

PO NO.:6.263

COMMODITY: 500KGS OF L-ARGININE HCL

PRODUCT CODE: 7108

CAS NO.: 1119-34-2

MANUFACTURE DATE: SEP.25, 2021

EXPIRY DATE: SEP.24, 2023

BATCH NO.: 20210925

Specifications	Standard Value	Testing Results
Appearance	White crystalline powder Or crystalline Powder	Conform
Specific Rotation $[\alpha]_D^{20}$	+21.4°~+23.6°	+22.3°
Loss on Drying	0.20% max.	0.16%
Residue on Ignition	0.10% max.	0.08%
Chloride (Cl)	16.58%~17.0%	16.73%
Sulfate	0.03% max.	Conform
Heavy Metals (as Pb)	10ppm max.	Conform
Lead (Pb)	3ppm max.	Conform
As <sub>2</sub> O <sub>3</sub> (As)	0.5ppm max.	Conform
Mercury (Hg)	0.1ppm max.	Conform
Cadmium (Cd)	1ppm max.	Conform
Other amino acid	Conform	Conform
Ammonium	0.02% max.	<0.02%
Fe	10ppm max.	<10ppm
Assay	99.0%~101.0%	99.2%
PH	4.7~5.3	5.3

For and on behalf of  
QINGDAO FREE TRADE ZONE  
UNITED INTERNATIONAL CO., LTD.

Authorized Signature (s)