

# BaseBulk

## CERTIFICATE OF ANALYSIS

Product Name	L-Citrulline-DL-Malate 2:1
Batch Number	HBCD24082103
Manufacturer	CNS89 - 35NAXA
Manufacture Date	21/08/2024
Expiry Date	20/08/2028
Origin	Produced by Fermentation / 2nd fermentation, using fermentation Arg

### Physical & Chemical Characteristics

Analysis Item	Specification	Result
Appearance	White crystals or crystalline powder	White crystals
Specific Rotation $[\alpha]_{D20}$	+16.5° – +18.5°	+17.70°
Transmittance	NLT 98%	98.8%
Chloride	NMT 0.05%	<0.05%
Ammonium	NMT 0.02%	<0.02%
Sulfate	NMT 0.020%	<0.02%
Iron	NMT 10 ppm	<10 ppm
Heavy Metals	NMT 10 ppm	<10 ppm
Lead	NMT 3 ppm	<3 ppm
Arsenic	NMT 1 ppm	<1 ppm
Cadmium	NMT 1 ppm	<1 ppm
Mercury	NMT 0.1 ppm	<0.1 ppm
Loss on Drying	NMT 0.30%	0.19%
Residue on Ignition	NMT 0.10%	0.05%
L-Citrulline	Report Only	69.57%
DL-Malic Acid	Report Only	31.34%
Assay	NLT 98.0%	100.91%
Particle Size	80% pass 60 mesh	93%
Bulk Density	0.40 – 0.60 g/ml	0.50 g/ml
Tapped Density	0.55 – 0.75 g/ml	0.64 g/ml

**Microbiological**

<b>Analysis Item</b>	<b>Specification</b>	<b>Result</b>
Total Plate Count	NMT 1,000 cfu/g	<1000 cfu/g
Yeast & Mold	NMT 100 cfu/g	<100 cfu/g
Coliforms	NMT 10 cfu/g	<10 cfu/g
E. coli	Negative	Negative
Salmonella	Negative	Negative
Pseudomonas	Negative	Negative
Staphylococcus aureus	Negative	Negative

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