



Technical Data Sheet

Tianjin Jincheng Biotechnology Co., Ltd.

Product Name: L-Citrulline-DL-Malate (2:1)

Chemical Structure:



Molecular Formula: L-Citrulline $C_6H_{13}N_3O_3$; DL-Malic acid $C_4H_6O_5$

Molecular Weight: 175.19 (L-citrulline); 134.09 (DL-malic acid)

CAS No.: 372-75-8 (L-citrulline); 617-48-1 (DL-malic acid)

Specifications

Item	Limit	Analysis method
Characters	White powder	Visual
Identification	In accordance with the standard retention time	HPLC
Optical rotation $[\alpha]_{D20}$	+16.5° to +18.5°	USP <781>
Solubility	Clear	Visual
Residue on ignition	Not more than 0.1%	USP <281>
Moisture	Not more than 0.5%	Karl Fischer
Chloride	Not more than 0.02%	USP <221>
Sulfate	Not more than 0.02%	USP <221>
Ammonium	Not more than 0.02%	Colorimetric method
Arsenic	Not more than 1 ppm	ICP-MS
Iron	Not more than 30 ppm	USP <241>
Heavy metals	Not more than 10 ppm	USP <231>
Assay	Not less than 99.0%	HPLC
L-Citrulline content	62.5% - 74.5%	HPLC
DL-Malate content	25.5% - 37.5%	HPLC
Total plate count	Not more than 1,000 cfu/g	USP <61>
Yeast and moulds	Not more than 100 cfu/g	USP <61>
E. coli	Absence	USP <62>
Salmonella	Absence in 25 g	USP <62>
Staphylococcus aureus	Absence in 25 g	USP <62>

Recommended shelf life: 2 years

External packing: Fibre drum, 25 kg net

Inner packing: Double-layer PE bag

Storage: Preserve in tight containers, protected from light, in a cool and dry place.

Note: Analytical methods refer to current USP general chapters and the manufacturer's standard (AMN 27); this document is for reference only and the quality of each batch is subject to the COA supplied with the goods.

Preparation Date: Sep. 21, 2026 | Version: 1.0 | Prepared by: | Product code: JC-CIM-001