

Product Technical Dossier

Product	L-Citrulline DL-Malate 1:1
CCL Product Code	P03319

Specification Details

	Specification	Method
Means of Identification	Positive	
Assay/Actives	>98%	
Appearance	Crystalline Powder	Visual
Colour	White to off white	Visual
Aroma	Characteristic	Organoleptic
Flavour	Characteristic	Organoleptic
Sieve Analysis % passed	80% Pass 60 Mesh	
Loss on Drying	<0.3%	
Ash	<0.1%	
Chloride (Cl)	<0.05%	
Specific Rotation [α] D20°	14.0° ± 1°	

Microbiological Limits

Total Viable Count	<1,000cfu/g	
Yeasts & Moulds	<100cfu/g	
E. Coli	Negative	
Salmonella	Negative/10g	
Staphylococcus aureus	Negative/g	

Heavy Metal Limits

Total Heavy metals	Max 10ppm	
Lead (Pb)	Max 1 ppm	
Cadmium (Cd)	Max 1 ppm	
Mercury (Hg)	Max 0.1 ppm	
Arsenic (As)	Max 1 ppm	
Iron	<10ppm	

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Version: 4



FDA number: 16806073982

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Registered in England No: 3590758 VAT No: GB 711 6598 32

Registered office: 203 Lancaster Way Business Park, Ely, Cambridgeshire, CB6 3NX, UK.

Additional Technical Information

Raw Material Full Botanical / Chemical Name	L-Citrulline DL-Malate 1:1
The material is Food Grade	Yes
Ratio of Material	1:1
Country of Origin	China
Country of Manufacture	China
Solubility (1g in 20ml water)	Soluble
Average Molecular weight	309.28mol/g
CAS Number	70796-17-7
Shelf Life from Date of Manufacture	Min 2 years
Pharmacopeia Standard Used	AJI, FCC
Suitable for Vegetarians?	Yes
Suitable for Vegans?	Yes
Storage Conditions	This material is to be stored in a tightly sealed bag/container and to be kept in a cool place away from moisture and direct sunlight.

Please note that surveillance testing may mean that not all the parameters stated on this specification are tested for every batch.

The allergen information is supplied by the manufacturer, we have not tested for each individual allergen to ensure they are not present. The information given is based on a documented risk assessment and is accurate to the best of our knowledge. If you intend to make a voluntary "free from" claim on your pack, additional testing may need to be carried out. For technical and labelling guidance, you should always speak to the competent authority for the market or member state in which the final products are placed.

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Allergens	Product Contains YES/NO	Listed Item on Site at Manufacturer YES/NO	Where applicable, is there risk of cross-contamination? YES/NO or N/A
Peanuts and Peanut Derivatives (including possible cross contamination)	No	No	
Nut and Nut Derivatives <i>Almond (Amygdalus communis L.), Hazelnut (Corylus avellana), Walnut (Juglans regia), Cashew (Anacardium occidentale), Pecan nut (Carya illinoensis (Wangenh.) K. Koch), Brazil nut (Bertholletia excelsa), Pistachio nut (Pistacia vera), Macadamia nut and Queensland nut (Macadamia ternifolia)</i>	No	No	
Sesame Seeds and Sesame Seed Derivatives	No	No	
Milk and Milk Derivatives (including lactose)	No	No	
Egg and Egg Derivatives	No	No	
Cereals and Derivatives containing OR POTENTIALLY CONTAMINATED WITH Gluten (wheat, wheatgrass, faro, freekeh, spelt, kamut, rye, oats, barley, barley grass)	No	No	
Soya and Soya Derivatives	No	No	
Lupin and Lupin Derivatives	No	No	
Mustard and Mustard Derivatives	No	No	
Celery or Celery Derivatives (including Celeriac)	No	No	
Fish and Fish Derivatives	No	No	
Molluscs and their Derivatives	No	No	
Crustaceans and their Derivatives	No	No	
Sulphur Dioxide and Sulphites (E220, E228) at levels > 10mg/kg or 10mg/litre	No	No	

Additives / Contaminants / Dietary Requirements / Intolerances	Product Contains YES/NO	Listed Item on Site at Manufacturer YES/NO	Where applicable, is there risk of cross-contamination? YES/NO or N/A
Additives / E Numbers	No	No	
Antioxidants	No	No	
Ethylene Oxide	No	No	
Gelatine	No	No	
Flavourings (Artificial / Nature Identical / Natural / Smoked)	No	No	
Maize / Corn and any Derivatives	No	Yes	Corn is used in fermentation process
Legumes / Pulses	No	No	
Rice and Rice Derivatives	No	No	
Added Salt	No	No	
Added Sugar / artificial or natural sweeteners	No	No	
Aspartame	No	No	
BHA / BHT (E320 / E321)	No	No	
Caffeine	No	No	
Colours (Artificial / Nature Identical / Natural / Smoked)	No	No	
Dextrose	No	No	
other Seeds and Seed Derivatives (Poppy Seeds, Cotton Seeds, Sunflower Seeds)	No	No	
Kiwi fruit	No	No	
Polyols (sugar alcohols)	No	No	
grape fruit	No	No	
Sorbic Acid (E200, E203)	No	No	
Any other Preservatives	No	No	
Ethanol	No	No	
Honey	No	No	
Lactose	No	No	
Yeast and Yeast Derivatives	No	No	
All Animal Products (Beef, Pork, Poultry or other) and Derivatives (which may include growth/yield hormones, antibiotics etc.)	No	No	
Bovine Products or Derivatives (which may include growth/yield hormones, antibiotics etc.)	No	No	

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Statements

Confirmation of BSE / TSE Status This is to certify that this product complies with all relevant current UK and EU Legislative requirements in regard to Transmissible Spongiform Encephalopathies (TSE) and Bovine Spongiform Encephalopathy (BSE) for human food, and so is free of TSE/BSE.	Yes
This is also to certify that, during the course of their manufacture, the above-mentioned product did not come into contact with any materials, which could be derived from TSE/BSE risk materials.	Yes
Confirmation of GM Status This is to certify that this product is not manufactured from GM raw materials and is therefore not subject to labelling under current regulations.	Yes
Confirmation of Non-Irradiation Status This is to certify that this product, whole or in part, has not been subjected to Ionising Radiation as per European Directives.	Yes
Confirmation of Nandrolone Status This is to certify that this product, whole or in part, has not come into contact with Nandrolone or any of its precursors in any way.	Yes
Confirmation of IOC Product Status This is to certify that this product, whole or in part, has not come into contact with any product/s, which is banned by the IOC (International Olympics Committee) and or WADA.	Yes
Confirmation of Animal Testing Status This is to certify that all the products sold by Cambridge Commodities have not been tested on animals in any part of its manufacture in accordance with current regulations.	Yes
Confirmation of Pesticides Status This is to certify that the above-mentioned product complies with the EU max residue limits (MRLs) on pesticides.	Yes
Confirmation of Nanoparticles Status This is to certify that unless otherwise stated, the above-mentioned product is free of nanoparticles. Commission Recommendation, defines as follows: "Nanomaterial" means a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm".	Yes
Packaging Status We hereby certify that the packaging used in the above-mentioned material conforms to EU regulations and subsequent amendments on food grade packaging	Yes
Confirmation of PAH status This is to certify that the above-mentioned product complies with the max PAH limits set by the EU regulations	Yes

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Product Flow Chart

Fermentation



Enzymatic Conversion
with L Arginine



Extract



Concentration



Crystallization



Drying



Blending with
DL-Malate



Finished Product

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Material Safety Data Sheet

To download this product's material safety data sheet, please click [here](#) and search for the Cambridge Commodities product code. If there is no MSDS available, please follow the on-screen instructions to request one.

The Information provided in this document is subject to change and the batch specific certificate of analysis should always be referenced.

To be used as per local legislation.

Change History

Version	Change	Customer Notification required Yes / No
1	First Issue	N/A
2	Kosher Status and Logo have been added	No
3	Updated loss on drying to <0.3%	No
4	<p>Changed the following information:</p> <ul style="list-style-type: none"> - Sieve analysis from 90% Pass 60 Mesh to 80% Pass 60 Mesh, - Yeast <100 cfu/g and Moulds <100 cfu/g to Yeasts & Moulds <100cfu/g, - Salmonella Negative to Negative/10g, - Arsenic (As) <1ppm to Max 1 ppm, - Staphylococcus aureus from Negative to Negative/g - Shelf Life from Date of Manufacture from 2 years to Min 2 years <p>Removed MSDS and AJI number. Added Lead (Pb) Max 1 ppm, Cadmium (Cd) Max 1 ppm, Mercury (Hg) Max 0.1 ppm information. Updated production flow chart. General reformat.</p>	Yes

Document Approval

Originator	Approver

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