

PRODUCT TECHNICAL DOSSIER

TRI-CREATINE OROTATE

Product Code:

P03453

Raw Material Full Name:

Tri-Creatine Orotate

Raw Material Full Botanical/Chemical/Latin/Trade Name/Synonyms:

Tri-Creatine Orotate

This material is Food Grade:

Yes

Vegan / Vegetarian Status:

✓

Limit/Range/Specification:

Min 98%

Means of Identification:

Titration

Ratio of Material:

60%

CAS Number:

768386-56-7

Molecular Formula for the raw material:

$C_{17}H_{25}N_{11}O_7$

Average Molecular weight:

495

Solubility in Water:

Slightly Soluble

Solubility in Alcohol:

Very Slightly Soluble



Viscosity:

N/A

Particle Size:

40 Mesh

Percentage passed through:

100%

Bulk Density:

0.55g/ml

Tapped Density:

0.65g/ml

Specific Gravity:

N/A

pH:

6.5-7.0

Loss on Drying:

<1.0%

Residue on Ignition:

<0.1%

Country of Origin:

China

Country of Origin of the Manufacture:

China

Base Source/Start Material:

Creatine, Orotate & water

Origin of Product – Synthetic, Plant, Mineral, Animal, Fish or Fermented:

Synthetic

Synthetic: What are the starting materials of the synthesis and their sources?

N/A

Species used:

N/A

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Part of the plant used:

N/A

Solvents used:

Alcohol

What is the extraction/processing used? What solvents are used and at what ratio's?

Alcohol extraction, Ratio's <5ppm

Material is:

99% Creatine, Orotate & 1% water

Compound Ingredients Origin, Function and Percentages:

N/A

Shelf Life from Date of Manufacture:

2 years from manufacture date

Storage Conditions:

Room temperature storage

Appearance (Fine/Crystals/Crystalline/Hygroscopic):

Fine Crystals powder

Colour:

White

Flavour/Taste:

Characteristic

Odour:

Characteristic

Do any of the parameters change in different seasons?

No



Microbiological Test

Total Viable Count:

<1,000cfu/g

Yeast & Moulds:

<50cfu/g

E.Coli:

Negative

Salmonella:

Negative

Heavy Metals

Heavy Metals:

Max 20ppm

Lead (Pb):

Max 3ppm

Cadmium (Cd):

Max 0.1ppm

Mercury (Hg):

Max 0.1ppm

Arsenic (As):

Max 0.1ppm

There are no nuts in this recipe; however we cannot guarantee that the raw materials entering the site are nut free.

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



ALLERGENS	Product Free From YES/NO	Listed Item on Site at Manufacturer YES/NO	If YES, Please Comment
Free from Peanuts and Peanut Derivatives (There are no nuts in this recipe, however CCL cannot guarantee that the raw materials entering the site are nut free.)	YES	NO	
Free from other 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> (There are no nuts in this recipe, however CCL cannot guarantee that the raw materials entering the site are nut free.)	YES	NO	
Free from Sesame Seeds and Sesame Seed Derivatives	YES	NO	
Free from other Seeds and Seed Derivatives (Poppy Seeds, Cotton Seeds, Sunflower Seeds)	YES	NO	
Free from Milk and Milk Derivatives (including lactose)	YES	NO	
Free from Egg and Egg Derivatives	YES	NO	
Free from Cereals and Derivatives containing OR POTENTIALLY CONTAMINATED WITH Gluten (<i>wheat, wheatgrass, faro, freekeh, spelt, kamut, rye, oats, barley, barley grass</i>)	YES	NO	
Free from Soya and Soya Derivatives	YES	NO	
Free from Lupin and Lupin Derivatives	YES	NO	
Free from Mustard and Mustard Derivatives	YES	NO	
Free from Celery or Celery Derivatives (including Celeriac)	YES	NO	
Free from Fish and Fish Derivatives	YES	NO	
Free from Molluscs and their Derivatives	YES	NO	
Free from Crustaceans and their Derivatives	YES	NO	
Free from Sulphur Dioxide and Sulphites (E220, E228) at levels > 10mg/kg or 10mg/litre	YES	NO	



ADDITIVES / CONTAMINANTS / DIETARY REQUIREMENTS	Product Free From YES/NO	Listed Item on Site at Manufacturer YES/NO	If YES, Please Comment
Free from Additives	YES	NO	
Free from Antioxidants	YES	NO	
Free from Ethylene Oxide	YES	NO	
Free from Gelatine	YES	NO	
Free from Flavourings (Artificial / Nature Identical / Natural / Smoked)	YES	NO	
Free from Maize / Corn and any Derivatives	YES	NO	
Free from Legumes / Pulses	YES	NO	
Free from Rice and Rice Derivatives	YES	NO	
Free from Added Salt	YES	NO	
Free from Added Sugar / artificial or natural sweeteners	YES	NO	
Free from Aspartame	YES	NO	
Free from BHA / BHT (E320 / E321)	YES	NO	
Free from Caffeine	YES	NO	
Free from Colours (Artificial / Nature Identical / Natural / Smoked)	YES	NO	
Free from Dextrose	YES	NO	
Free from Dioxins	YES	NO	
Free from MSG (Added and Naturally Occurring E621) or Glutamates (E620 to E625)	YES	NO	
Free from Nucleotides (E627, E630, E631, E635)	YES	NO	
Free from Polyols (sugar alcohols)	YES	NO	
Free from Benzoates (E210 / E219)	YES	NO	
Free from Sorbic Acid (E200, E203)	YES	NO	
Free from any other Preservatives	YES	NO	
Free from Ethanol	YES	NO	
Free from Honey	YES	NO	
Free from Lactose	YES	NO	
Free from Yeast and Yeast Derivatives	YES	NO	
Free from All Animal Products (Beef, Pork, Poultry or other) and Derivatives (which may include growth/yield hormones, antibiotics etc.)	YES	NO	
Free from Bovine Products or Derivatives (which may include growth/yield hormones, antibiotics etc.)	YES	NO	

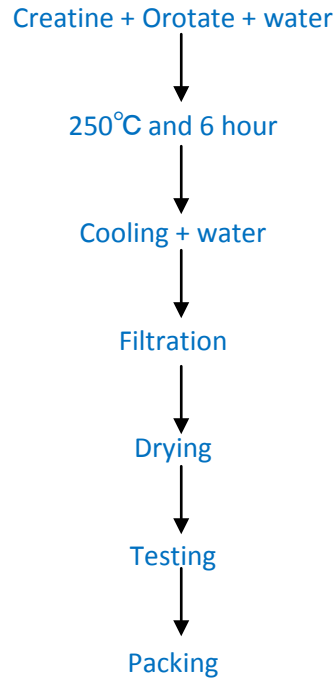


NUTRITIONAL DATA

Test	Calculated Value per 100gm
Energy KJ / Kcal	0 KJ / 0 Kcal
Fat	0
- Of which saturates	0
Carbohydrate	0
- Of which sugars	0
Fibre	0
Protein	0
Salt	0



PRODUCTION FLOW CHART



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.

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.

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 regulations 1829/2003/EC and 1830/2003/EC.

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 1999/3/EC.

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.

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.

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 regulation 86/609/EEC.

CONFIRMATION OF PESTICIDES STATUS

This is to certify that the above-mentioned product complies with the regulation (EC) No.396/2005 of 23rd February 2005 and commission Regulation (EU) No. 559/2011 of 7th June 2011 amending annexes II and III of the above Regulation.

CONFIRMATION OF NANOPARTICLE STATUS

This is to certify that unless otherwise stated, the above-mentioned product is free of nanoparticles. Commission Recommendation 2011/696/EU, 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".



MATERIAL SAFETY DATA SHEET**Section 1. Identification of the Substance/Mixture and of the Company/Undertaking**

Product name: Tri-Creatine Orotate
Product Code: P03453
Chemical formula: $C_{17}H_{25}N_{11}O_7$
Company: Cambridge Commodities Limited
Lancaster Way, Ely, Cambridgeshire, CB6 3NX
Tel: 01353 667258. Email: qa@c-c-l.com

Section 2. Hazards Identification

Potential Acute Health Effects: Hazardous in case of eye contact (irritant). Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 3. Composition/Information on Ingredients

Name: Creatine Orotate
CAS No.: 768386-56-7
% by weight: 100

Toxicological Data on Ingredients: Magnesium Creatine Chelate ORAL (LD50): Acute: 5500mg/kg [Rat]

Section 4. Emergency and First Aid Measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

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Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation:	Not available.
Ingestion:	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion:	Not available.

Section 5. Fire-fighting measures

Flammability of the Product:	Non-flammable.
Auto-Ignition Temperature:	Not applicable.
Flash Points:	Not applicable.
Flammable Limits:	Not applicable.
Products of Combustion:	Not available.
Fire Hazards in Presence of Various Substances:	Not applicable.
Explosion Hazards in Presence of Various Substances:	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions:	Not applicable.
Special Remarks on Fire Hazards:	Will ignite and burn fiercely in contact with fluorine.

Section 6. Accidental Release Measures

Small Spill:	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill:	Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TL V. Check TL V on the MSDS and with local authorities.



Section 7. Handling and Storage

Precautions:	Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.
Storage:	Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic

Section 8. Exposure Controls/Personal Protection

Engineering Controls:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection:	Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill:	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits:	TWA: 10 (mg/m ³) from ACGIH (TLV) [United States] Inhalation Total. TWA: 10 STEL: 20 (mg/m ³) [Canada] Inhalation Total. TWA: 5 (mg/m ³) from OSHA (PEL) [United States] Inhalation Respirable. TWA: 15 from OSHA (PEL) [United States] Inhalation Total. Consult local authorities for acceptable exposure limits.

Section 9 Physical and Chemical Properties

Physical state and appearance:	Solid. (Powdered solid.)
Odour:	Odourless.
Taste:	Chalky
Molecular Weight:	549 g/mole
Colour:	White.
pH (1% soln/water):	Not available.
Boiling Point:	Not available.
Melting Point:	218-225°C
Critical Temperature:	Not available.
Specific Gravity:	Not applicable.
Vapour Pressure:	Not applicable.
Vapour Density:	Not available.
Volatility:	Not available.

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Odour Threshold:	Not available.
Water/Oil Dist. Coeff.:	Not available.
Ionicity (in Water):	Not available.
Dispersion Properties:	Not available.
Solubility:	Very slightly soluble in cold water. Soluble in dilute acid. Insoluble in alcohol.

Section 10 Stability and Reactivity

Stability:	The product is stable.
Instability Temperature:	Not available.
Conditions of Instability:	Incompatible Materials.
Incompatibility with various substances:	Reactive with oxidizing agents, acids.
Corrosivity:	Non-corrosive in presence of glass.
Special Remarks on Reactivity:	Hygroscopic. Will ignite and burn fiercely in contact with fluorine. Incompatible with acids, alum, ammonium salts, mercury + hydrogen, aluminium and magnesium
Special Remarks on Corrosivity:	Not available.
Polymerization:	Will not occur.

Section 11 Toxicological Information

Routes of Entry:	Inhalation. Ingestion.
Toxicity to Animals:	Acute oral toxicity (LD50): 5500 mg/kg [Rat].
Chronic Effects on Humans:	May cause damage to the following organs: kidneys.
Other Toxic Effects on Humans:	Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.
Special Remarks on Toxicity to Animals:	Not available.
Special Remarks on Chronic Effects on Humans:	Not available.
Special Remarks on other Toxic Effects on Humans:	Acute Potential Health Effects: Skin: Causes skin irritation. Eyes: Dust causes eye irritation. Inhalation: Excessive inhalation causes respiratory tract and mucous membrane irritation. Low hazard for usual industrial handling. Ingestion: Ingestion of large amounts may cause gastrointestinal tract disturbances with nausea and possibly constipation. Expected to be a low hazard for usual industrial handling. Chronic Potential Health Effects: Chronic ingestion may affect kidneys, and may cause hypercalcemia with alkalosis.



Section 12 Ecological Information

Ecotoxicity:	Not available.
BODS and COD:	Not available.
Products of Biodegradation:	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation:	The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation:	Not available.

Section 13 Disposal Considerations

Waste Disposal:	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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Section 14 Transport Information

DOT Classification:	Not a DOT controlled material (United States).
Identification:	Not applicable.
Special Provisions for Transport:	Not applicable.

Section 15 Regulatory Information

Federal and State Regulations:	TSCA 8(b) inventory: Creatine Orotate
Other Regulations:	EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.
Other Classifications:	WHMIS (Canada): Not controlled under WHMIS (Canada). DSCL(EEC): R36-Irritating to eyes. S2-Keep out of the reach of children. S46-If swallowed, seek medical advice immediately and show this container or label. HMIS (U.S.A.): Health Hazard: 2 Fire Hazard: 0 Reactivity: 0 Personal Protection: E National Fire Protection Association (U.S.A.): Health: 1



Flammability: 0
 Reactivity: 0

Specific hazard: Protective Equipment: Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

Section 16 Other Information

This advice is given by Cambridge Commodities Ltd who accepts no legal liability for it. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.

Individuals working with chemicals should consider all chemicals to be potentially hazardous even if their individual hazards may be uncharacterised or unknown.


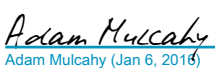
This Information provided in this document is subject to change and the batch specific Certificate of Analysis should always be referenced.

To be used as per local legislation.

Change History

Version	Change	Customer Notification required Yes / No
1	First Issue	N/A

Document Approval

Originator Job Title	QC Technician	Approver Job Title	QC Technician
 Jennifer Fordham (Jan 6, 2016)		 Adam Mulcahy (Jan 6, 2016)	











P03453-Tri-Creatine Orotate- Technical Dossier

Adobe Document Cloud Document
History

January 06, 2016

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