

Product Technical Dossier

Product	D-Glucosamine Sulphate 2KCl (40 mesh, fully soluble)	
CCL Product Code	P0718	

Specification Details

	Specification	
Identification (IR)	Positive	
Assay/Actives	Glucosamine Sulphate 2KCl Content 98% - 102% (drying basis) Glucosamine Sulphate Content 73.5% - 77.5% Glucosamine Content 58.4% - 62.4%	
Appearance	Crystalline Powder	
Colour	White to Off-White	
Aroma	Characteristic	
Flavour	Characteristic	
Sieve Analysis % passed	100% Pass 40 Mesh	
Loss on Drying Max 0.5%		
Residue on Ignition	27.0% - 29.0%	
Bulk Density	Min 0.70g/ml	
Chloride	11.1% - 12.3%	
Sodium	Meet the requirements	
рН	3.0 - 5.0	
Sulphate	15.5% - 16.5%	
Specific Rotation	+50.0° - +52.0°	
Organic volatile impurities	Meet the requirements	

Microbiological Limits

Total Viable Count	Max 1,000cfu/g
Yeasts & Moulds	Max 100cfu/g
E. Coli	Negative
Salmonella	Negative

Heavy Metal Limits

Total Heavy metals	Max 10ppm
Lead (Pb)	Max 3ppm
Cadmium (Cd)	Max 1ppm
Mercury (Hg)	Max 0.1ppm
Arsenic (As)	Max 2ppm

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Additional Technical Information

Raw Material Full Botanical / Chemical Name	Glucosamine Sulphate Potassium Chloride
The material is Food Grade	Yes
Solvent used	Ethanol (food grade)
Country of Origin	China
Country of Manufacture	China
Solubility in Alcohol	Insoluble in alcohol
Solubility in Water	Easily soluble in water
Average Molecular weight	605.52
Molecular Formula	(C6H14NO5)2SO4•2KCI
CAS Number	31284-96-5
Shelf Life from Date of Manufacture	Min 2 Years
Pharmacopeia Standard Used	USP
Suitable for Vegetarians?	No
Suitable for Vegans?	No
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.

Composition Origin, Function and Percentages

Ingredients	Function	% composition	Source
Glucosamine Sulphate 2KCl	-	100%	Shell from Crab and Shrimp

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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Cambridge Commodities

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	N/A
Nut and Nut Derivatives Almond (Amygdalus communis L.), Hazelnut (Corylus avellana), Walnut (Juglans regia), Cashew (Anacardium occidentale), Pecan nut (Carya illinoiesis (Wangenh.) K. Koch), Brazil nut (Bertholletia excelsa), Pistachio nut (Pistacia vera), Macadamia nut and Queensland nut (Macadamia ternifolia)	No	No	N/A
Sesame Seeds and Sesame Seed Derivatives	No	No	N/A
Milk and Milk Derivatives (including lactose)	No	No	N/A
Egg and Egg Derivatives	No	No	N/A
Cereals and Derivatives containing OR POTENTIALLY CONTAMINATED WITH Gluten (wheat, wheatgrass, faro, freekeh, spelt, kamut, rye, oats, barley, barleygrass)	No	No	N/A
Soya and Soya Derivatives	No	No	N/A
Lupin and Lupin Derivatives	No	No	N/A
Mustard and Mustard Derivatives	No	No	N/A
Celery or Celery Derivatives (including Celeriac)	No	No	N/A
Fish and Fish Derivatives	No	No	N/A
Molluscs and their Derivatives	No	No	N/A
Crustaceans and their Derivatives	Yes	Yes	Crab and Shrimp
Sulphur Dioxide and Sulphites (E220, E228) at levels > 10mg/kg or 10mg/litre	No	No	N/A

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	N/A
Antioxidants	No	No	N/A
Ethylene Oxide	No	No	N/A
Gelatine	No	No	N/A
Flavourings (Artificial / Nature Identical / Natural / Smoked)	No	No	N/A
Maize / Corn and any Derivatives	No	No	N/A
Legumes / Pulses	No	No	N/A
Rice and Rice Derivatives	No	No	N/A
Added Salt	No	No	N/A
Added Sugar / artificial or natural sweeteners	No	No	N/A
Aspartame	No	No	N/A
BHA / BHT (E320 / E321)	No	No	N/A
Caffeine	No	No	N/A
Colours (Artificial / Nature Identical / Natural / Smoked)	No	No	N/A
Dextrose	No	No	N/A
other Seeds and Seed Derivatives (Poppy Seeds, Cotton Seeds, Sunflower Seeds)	No	No	N/A
Kiwi fruit	No	No	N/A
Polyols (sugar alcohols)	No	No	N/A
Grapefruit	No	No	N/A
Sorbic Acid (E200, E203)	No	No	N/A
Any other Preservatives	No	No	N/A
Ethanol	Yes	Yes	Used in Extraction
Honey	No	No	N/A
Lactose	No	No	N/A
Yeast and Yeast Derivatives	No	No	N/A
All Animal Products (Beef, Pork, Poultry or other) and Derivatives (which may include growth/yield hormones, antibiotics etc.)	Yes	Yes	Crab and Shrimp
Bovine Products or Derivatives (which may include growth/yield hormones, antibiotics etc.)	No	No	N/A
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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

Acceptance and testing of chitin biomass according to acceptance criteria Weighing Ţ Loading into hydrolysis reactor Cooling Transfer to crystallisation tank Crystallisation Centrifugation to harvest crude product Dissolution in water Ţ Transfer to new tank Decolorisation with activated charcoal Filtration of purified, solubilized product 1 Concentration and crystallisation under vacuum Centrifugation to harvest crystals washing with EtOH ↓ centrifugation Ţ Drying milling 1 sieving Packaging of Glucosamine Hydrochloride crystals Mix with a certain ration of food grade K2SO4 T Sieve Ţ Packing Product Code: P0718 Version: 9 Page 5 of 7 Committed to meeting quality standards. BRC Food Safety . FEMAS . FSMA . Informed Manufacturer. Soil Association Organic . Halal . Kosher . For a full range of our accreditations visit www.cambridgecommodities.com/quality-accreditations/certificates (Ý \sim +44 (0) 1353667258 | www.cambridgecommodities.com | enquiries@cambridgecommodities.com

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Material Safety Data Sheet

To download this product's material safety data sheet, please click <u>here</u> and search for the Cambridge Commodities product code. If there is no MSDS available, please follow the onscreen 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&2	First Issue	N/A
3	The format has been updated	No
4	The following has been updated, due to the supplier updating their specification: - Glucosamine Sulphate Content has been updated from Approximately 75.4% to 73.5% - 77.5% - Glucosamine Content has been updated from Approximately 59.5% to 58.4% - 62.4% - Tapped Density has been removed - Bulk Density has been updated from 0.75-0.95g/ml to Min 0.70g/ml - Residue on Ignition has been updated from 27.0% - 29.0% to 26.5% - 31.0% - Chloride has been added - Lead (Pb) has been updated from Max 0.5ppm to Max 3ppm - Cadmium (Cd) has been updated from Max 0.1ppm to Max 1ppm - Arsenic (As) has been updated from Max 1ppm to Max 3ppm	Yes
5	Added production flowchart. Updated MSDS and extraction method. General reformat.	Yes
6	General reformat Additional technical information Changes: • CAS from 29031-19-4 to 38899-05-7 • Molluscs on allergen table from yes to no for product contains • Solubility in Alcohol from soluble to insoluble • Ash from 26.5% - 31.0% to 27%-31%	Yes
7	Updated CAS Number from 38899-05-7 to 31284-96-5.	Yes
8	Changed Residue on Ignition from 27% - 31.0% to 27.0% - 29.0%	Yes

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9	Changed Arsenic from Max 3ppm to Max 2ppm	Yes
	Added Sodium to specification	

Document Approval

	Originator		Approver
Mel Lee	Mel Lee	ت دغالغ كرريم، بغ	Cecilia Anzani
	Quality Administrator	مورون 12.42	Senior Quality Specialist

