Wide Open Ingredients

Lupins. Reimagined.

LUPIN KERNEL FIBRE

Item Code:	(TBA)
Product description:	lupin kernel fibre made from Sweet Blue Lupin (Angustifolios).
Ingredient listing:	100% Lupin kernel fibre
Country of origin:	Made in Germany from 100% Sweet Blue Lupin

Lupin kernel fibres are the perfect solution for consumers actively looking for food and drink that support a healthy, balance lifestyle.

The kernels (dehulled seeds) of lupins (Lupinus spp.) contain far higher dietary fibre levels than other legumes. Lupin kernel fibre contains a wide range of different classes of polysaccharides, including pectin substances, cellulose, and non-starch non-cellulosic glucans, with an absence of lignin.

The fibre has properties of both insoluble and soluble fibres, making it a unique food ingredient with broad application.

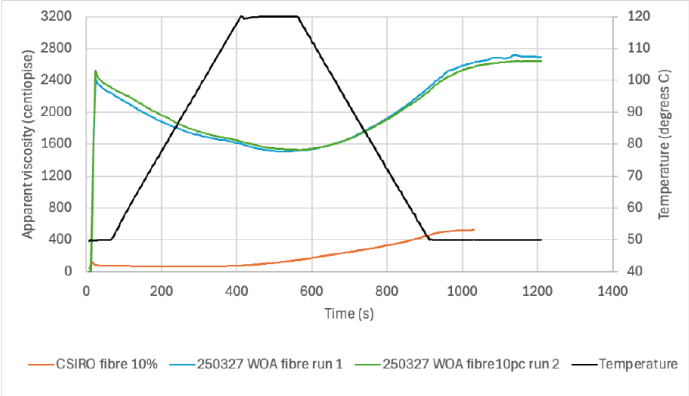
Sensory	
Colour	Cream/pale beige
Texture	Free-flowing powder
Flavour	Neutral
Aroma	Neutral

Functionality

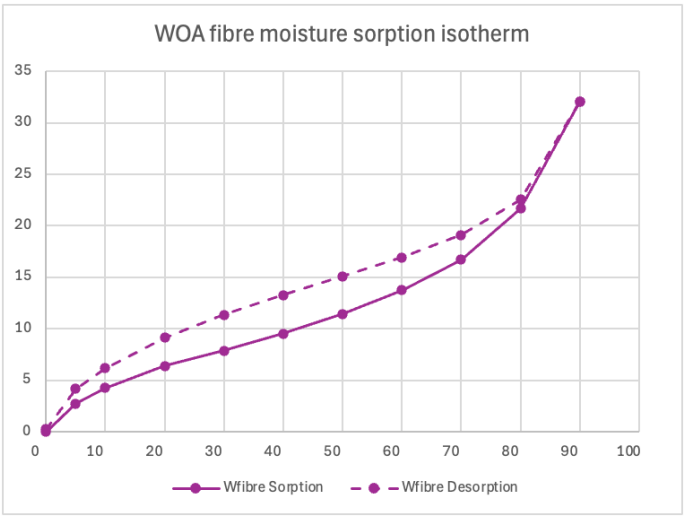
LKF can change textural, rheological and sensorial characteristics of foods related to their physiochemical properties. It compares well with other fibre ingredients, either as a stand-alone product or in a functional blend.

Techno-functionality criteria	
Water binding capacity (g/g)	8.3 – 9.0
Oil binding capacity (ml/g):	2.07 – 3.9
Emulsion activity (%)	45-53
Emulsion stability (%)	45-63
Viscosity (CP)	7500-9000

- Heat stable – very little effect on rheological properties or water distribution (by NMR) in 10% WOA fibre. RVA heating causes reversible thinning of WOA fibre, with little effect on water partitioning.



- Good stability under sheer - power law flow curves typical of biopolymer solutions, yielding at higher stress and strain than other fibres tested.
- Excellent water binding capacity - At a target 70%P/Po the sorption was 16.69 and desorption 19.1, indicating excellent water binding capacity.



Target % P/Po	Wfibre Sorption	Wfibre Desorption
0	0.00	0.25
5	2.72	4.16
10	4.27	6.16
20	6.37	9.12
30	7.87	11.35
40	9.53	13.26
50	11.45	15.09
60	13.76	16.93
70	16.69	19.10
80	21.65	22.53
90	32.00	32.00

[Lupin Kernel Fibre Study: CSIRO (2025)]

Health & Nutritional Properties

Typical Nutrition composition (/100g)	
Dietary fibre	62.4 g
Energy	997 kJ
Protein	14.2 g
Fat	2.7 g
Saturated fat	0.6 g
Moisture	9.4 g
Carbohydrates	9.2 g
Total sugars	0.1 g
Sodium	459 mg
Ash	2.0 g

Lupin kernel fibre intake has been associated with good health outcomes in a number of studies:

- Gastrointestinal health benefits - There is good evidence from several independent studies that lupin kernel fibre consumption can beneficially affect the gut microbiome (ie the balance of "good" probiotics and "bad" potential pathogens) and chemical markers of good bowel health and function – therefore it can be classified as a 'prebiotic' food ingredient.
- Metabolic syndrome protection - the unique properties of lupin kernel fibre - bioactive protein complex could help lower these risk factors as part of a healthy diet and lifestyle.
- Appetite and body weight reduction – foods incorporating LKF are highly satiating, potentially reducing appetite after eating and therefore assisting with maintaining healthy body weight.
- Cholesterol and blood pressure – several studies have investigated the effect of diets containing lupin kernel fibre on these cardiovascular disease risk biomarkers, highlighting positive impacts.
- Protection from type 2 diabetes - Inclusion of low GL foods is recommended for diets to protect against type 2-diabetes (Buyken et al., 2010). Substituting a high GI flour with lupin kernel fibre can lower a product's glycemic load (GL), reducing the glycaemic response.
- Lupin kernel fibre also contains significant residual levels of many other components such as bound polyphenol antioxidants (Wu et al., 2018). Interest has escalated in the concept of dietary fibre ingredients as bioactive complexes where the bioactivity of the fibre may in part be contributed by the other components.

Applications:

The largely insoluble lupin kernel fibre exhibits excellent techno-functional properties of water and oil binding capacities, solubility indices, emulsion stabilities and viscosity, which enable it to be used in a variety of food applications.

It's smooth texture and neutral aroma and flavour make it ideal for fibre enrichment in a wide range of foods such as dairy, baked goods, and meat products.

A limited number of studies have been conducted on LKF applications:

- Excellent heat stability makes it ideal for applications requiring heat treatment such as beverage pasteurisation.
- 'Invisible fibre' properties make it ideal to fortify a broad range of products including bread, muffins, brownies, pasta, orange juice, chocolate milk, muesli and breakfast bar.
- Helps reduce kJ while maintaining texture and mouthfeel in reduced sugar/fat products.
- Improves baking stability without affecting taste, including fillings or toppings
- Enables superior coatings for fried foods due to texturising properties and the high and stable water-binding and good oil-binding properties. [McCleary and Prosky (2001)]

Consumer friendly labelling – low fat, no cholesterol, low sodium, low digestible carbohydrate

Allergy Status

The product contains lupin corresponding to Appendix 2 of the European Food Information Regulation No. 1169/2011. Check local regulations for labelling requirements.