

Nateeo's vegetable lecithins are obtained from vegetable raw materials: soybean, rapeseed and sunflower. From seed processing to the finished ingredient, the production cycle takes place within its production facilities, ensuring food safety, freshness and traceability.



## QUALITY AND SAFETY IN THE PRODUCTION OF **VEGETABLE EMULSIFIERS**



Nateeo, a Cereal Docks Group's company based in Camisano Vicentino, Italy, is among European leading players in ingredients for the food industry, with a well-established expertise in vegetable emulsifiers. Its product portfolio includes standardized vegetable lecithins, functional blends and customized ingredient solutions. It stands out for its high quality standards and rigorous product and process certifications.

Nateeo's vegetable lecithins-derived from non-GMO raw materials, soy, rapeseed and sunflower-are the result of safe and fully traceable supply chain. Nateeo's strength lies in its complete production cycle: the transformation of the seed into the finished product is carried out in its own production facilities, ensuring safety, traceability and freshness.

With more than 250 customers and 33 distributors in 27 European countries, Nateeo has built a solid market presence, thanks to a flexible and customer-oriented business

model, capable of continuously adapting to the growing and changing needs of the global market.

### LECITHINS IN THE FOOD SECTOR: TYPES, FUNCTIONALITY AND APPLICATIONS

Lecithins are a class of phospholipids that play a crucial role in the food sector thanks to their emulsifying, stabilizing, and lubricating properties. They are present in many natural sources, including soybean, sunflower, rape-

Average composition of fluid and de-oiled lecithins

	Fluid lecithins	De-oiled lecithins
Total phospholipids	~ 56	~ 86
Total neutral lipids	38 – 44	2.5

Fonte: Whitehurst, R. J. (2004). *Emulsifiers in Food Technology*. Blackwell Publishing.

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seed, and even eggs. Lecithins are widely used in many food products to improve texture, stability, and the overall quality of foods. In the paragraphs below, we will examine the various types of available lecithins and their specific applications in the food industry.

### SOY LECITHIN

Soy lecithin is the most common and it is widely used in the food industry. Extracted from soybeans, it is a natural emulsifier that helps mix immiscible ingredients such as water and fat. It is often used in baked goods, chocolate, margarine and dairy products to improve texture and prevent the separation of the ingredients. Soy lecithin is also used as an ingredient to reduce the fat content in formulations, making products healthier without compromising taste or quality.

### SUNFLOWER LECITHIN

In recent years, sunflower lecithin has gained popularity as an alternative to soy lecithin, particularly appreciated by consumers who prefer non-GMO and allergen-free products.

Extracted from sunflower seeds, this lecithin offers soy-like characteristics, such as emulsifying and stabilizing properties, and it is used in products such as sauces, dressings and baked goods, and white chocolate. Sunflower lecithin is also preferred in organic products and in those destined to markets which are highly regulated in allergens issues.

### RAPESEED LECITHIN

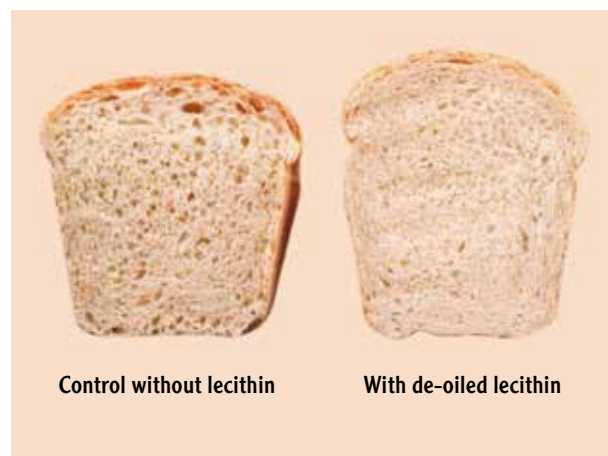
Rapeseed lecithin, derived from rapeseed, is another option in the field of vegetable lecithins. Thanks to its high omega-3 fatty acid content, rapeseed lecithin is particularly popular in food formulations that aim to promote cardiovascular health. In addition to its emulsifying properties, rapeseed lecithin is used in functional foods and dietary supplements to improve the nutritional profile.

### EGG LECITHIN

Before the arrival of plant-based alternatives, egg lecithin was widely used in the food industry. Derived from egg yolk, it is a powerful emulsifier used primarily in sauces, dairy products, but especially in the flavor and nutraceutical industry. Although less common today because of its cost and allergen concerns, egg lecithin remains a choice in some premium applications where superior quality and a very refined texture are required.

### DE-OILED LECITHIN

Vegetable (soybean, sunflower and



**Improved volume development and homogeneous honeycomb distribution. Above, a comparison between control without lecithin and with de-oiled lecithin**

rapeseed) de-oiled lecithins are oilfree so they are very rich in phospholipids. The color and flavor are rather neutral and they are available in both powder and granular versions. De-oiled lecithins offer a number of functional properties, including those of emulsifier, stabilizer and dispersant. In the bakery industry, for example, de-oiled lecithins play a crucial role in improving dough structure, promoting greater homogeneity and increasing the fluffiness and the freshness of the finished product.

### HYDROLYZED LECITHIN

Hydrolyzed lecithin is a modified form of lecithin that has undergone a process of hydrolysis, improving its emulsifying properties. This type of lecithin is particularly useful in food applications where increased emulsion stability is needed, such as in ready-to-drink beverages, dairy desserts, and sauces. In addition, hydrolyzed lecithin is often used in low-fat formulations because it helps to improve the sensory perception of the product without adding additional fat, and in "frozen" applications where lecithin plays a crucial role in protecting the gluten mesh stressed by the thermal shocks of freezing and defrosting.

### FLUID LECITHIN OR LECITHIN POWDER?

Lecithins are available in both liquid





Nateeo plant  
in Camisano  
Vicentino (Vicenza)



and powder form, and the choice between the two depends on the specific application. Fluid lecithin is commonly used in large-scale manufacturing processes, such as in the preparation of chocolate and margarine, because it is easy to mix. Lecithin powder, on the other hand, is preferred in dry formulations, such as in baked goods and snacks, where precise dosing and easy incorporation into dry ingredients is necessary. It is better to premix it with other powders such as sugar or flours.

#### NUTRITIONAL BENEFITS

In addition to its technical properties, lecithin also offers nutritional benefits.

Rich in phosphatidylcholine, an essential component of cell membranes, lecithin supports brain and nervous system health. Moreover, some research suggest that lecithin consumption may help to improve the blood lipid profile, contributing

### At IFT First in Chicago, between science and food innovation

Researchers, scientists, and entrepreneurs from the entire global food supply chain gathered in Chicago for the major global food science and innovation expo, IFT First, organized by the Institute of Food Technologists (IFT).

Nateeo's CEO Silvia Santarelli had the opportunity to explore the U.S. food market and interact with its key players, taking a close look at the latest solutions, innovative technologies, new products, services, and ingredients.

This year's theme- "Collaboration and Innovation: How can science and technology transform the food system?" - allowed to discuss of some topical issues such as: human-machine interaction; Climate-Friendly supply chains, capable of integrating sustainable practices into every aspect of food production and distribution; food and nutrition safety; and innovative products and services within a pavilion of nearly 100 startups, all with the potential to transform the food system.

Collaboration and integration of diverse perspectives, disciplines, and contexts are key to making the food system safer, more equitable, and more sustainable. IFT First was a valuable experience for the company for networking and sharing with the U.S. market, enriched by a constructive overview of the challenges, opportunities and prospects of the global food industry.

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to cholesterol reduction, and the leading ingredient for this function is undoubtedly the granular lecithin that we commonly find on the shelves of the major pharmacies and supermarket brands. In conclusion, lecithins are adaptable and valuable ingredients in the food industry and beyond, with different

types that meet specific needs in terms of functionality, application, production processes, and even consumer preferences. The choice of the lecithin type depends on multiple factors, including product type, production requirements, and nutritional considerations. As demand for healthier and more natural products increases, we will see further development and innovation in the use of lecithins in the coming years such as, for example, lecithins extracted from other plant matrices.