

LIFE SCIENCE –  
FOOD

**WACKER**

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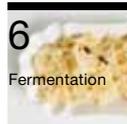
CREATING TOMORROW'S SOLUTIONS

ENGLISH

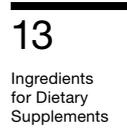
**LIFE SCIENCE – FOOD:** High-quality raw materials and additives with special properties can optimize the quality of food and enhance their related manufacturing processes. WACKER products set new standards in terms of bioavailability, taste and stability, and therefore offer an optimal basis for the cost-effective production of food.

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## Food Industry



## Food Supplement Applications



## WACKER at a Glance



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# Modern and Traditional Processes for Customized Contract Manufacturing

## Food Industry

WACKER's food-industry product portfolio encompasses a premium range of raw materials and additives for improving products and processes. Cutting-edge CAVAMAX® cyclodextrin formulations exhibit excellent properties for, e.g. the targeted protection and masking of specific flavorings, the manufacturing of trans-fat-free fats and use as soluble roughage fiber. Cysteine produced by fermentation is a further essential raw material in our product portfolio. VINNAPAS® polyvinyl acetate is an important ingredient in chewing gum base. As a valuable flow aid and thickening agent, thixotropic HDK® pyrogenic silica is an efficient product and process optimizer. SILFAR® and SILFOAM® foam-control systems facilitate smooth processing of foods and food supplements. If required, these systems can even be used to adjust the foaming when the end product is consumed.

## Applications

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Flavorings  
Coenzymes  
Fermentation  
Gum base  
Food packaging  
Food additives  
Soluble fibers  
Processing auxiliaries  
Foam control  
Pet food  
Trans-fat-free fats  
Vitamins

## Products

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CAVAMAX®, CAVASOL®, HDK®,  
L-Cysteine, SILFAR®, SILFOAM®,  
VINNAPAS®





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## Food Industry Applications



### Pet Food

Its high quality and non-human, non-animal origins make WACKER L-Cysteine an ideal basis for flavorings and dietary supplements in the animal feed sector. It satisfies the highest of product safety requirements.



### Coenzymes

The highly bioavailable CAVAMAX® coenzyme Q10 powder disperses excellently in aqueous systems. It can be easily added to beverages or other food and food supplements, opening up scope for new and innovative applications.



### Fermentation

CAVAMAX® cyclodextrins and CAVASOL® cyclodextrin derivatives are the aids of choice in fermentation, where they are used to extract the desired fermentation products. L-Cysteine is also used in fermentations, e.g. to promote the growth of probiotic bacteria.



### Flavorings

Produced via fermentation, L-Cysteine has proven itself as an optimal raw material for the manufacture of flavorings, especially in vegetarian, kosher and halal foods. CAVAMAX® cyclodextrins function as vehicles for transporting non-water-soluble materials such as flavorings, which they readily encapsulate. At the same time they provide targeted protection or masking of properties.



### Foam Control

In the food processing industry, foam can arise at any number of stages in the production chain – at the cost of process efficiency and product quality. SILFAR® and SILFOAM® facilitate smooth-running processes and improved product quality.



### Food Additives

CAVAMAX® cyclodextrins are used to optimize products in, e.g., the flavor, baking and beverage industries, where they offer potential for novel food applications.



### Food Packaging

Intelligent packaging incorporating cyclodextrins has improved barrier protection, which helps preserve the organoleptic properties of food and guards against contamination from external sources. This enhances the quality of the products and gives them a longer shelf-life.



### Gum Base

VINNAPAS® polyvinyl acetate is used worldwide as an essential ingredient in all sorts of modern gum bases, fulfilling the strict quality and hygiene requirements of ISO standards 9001 and 14001, HACCP, and the Jewish dietary (kashrut) laws.



### Processing Auxiliaries

HDK® pyrogenic silica serves as an ultrapure free-flow and anti-caking agent in powder-form food and ground spices, as well as a grinding aid for food additives. L-Cysteine is used in the baking industry to make dough smoother and easier to knead.



### Soluble Fibers

The  $\alpha$ -cyclodextrin CAVAMAX® W6 F is a soluble fiber which can be added to foods as a product-optimizing dietary supplement. Because it lowers the glycemic index of starch-based foods, CAVAMAX® W6 F is also ideally suited as a fiber-containing food additive.



### Trans-Fat-Free Fats

WACKER cyclodextrin technology offers an effective innovation for the manufacture of trans-fat-free fats and emulsions. Fats and oils are hardened or emulsified without affecting the nutritional balance.



### Vitamins

CAVAMAX® cyclodextrin complexes efficiently protect vitamins and coenzymes against oxidation, release them at a controlled rate, and thereby improve their bio-availability. Complexed vitamins also exhibit greater stability and can be dosed more efficiently.

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# Molecular Sugar Cones for Intelligent Innovations

## Food Supplements

Food supplements often consist of poorly soluble or highly sensitive compounds. To fully unfold their positive effect, they must be absorbed intact by the body. Innovative CAVAMAX® products achieve active protection of these substances as well as masking undesirable tastes and smells. WACKER offers you an efficient, state-of-the-art product portfolio, including cyclodextrin complexes in ready-to-use form. The  $\alpha$ -cyclodextrin (CAVAMAX® W6 F) can also be used as an effective soluble fiber.

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## Applications

Ingredients for dietary supplements  
Soluble fibers

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## Products

CAVAMAX®





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# Food Supplement Applications



## Ingredients for Dietary Supplements

CAVAMAX® cyclodextrins reliably protect sensitive active ingredients against the effects of temperature, oxidation or hydrolysis. They are also chosen by customers for their ability to mask taste or smells, to stabilize flavors, and to improve the absorption capacity for active, healthy ingredients. Coenzyme Q10, for example, is an antioxidant that plays a key role in human metabolism, where it is vital for the generation of body energy. In the form of the highly bioavailable CAVAMAX® coenzyme Q10 powder, it is used in both liquid and solid foods or in food supplements. Highly stable CAVAMAX® W8 d-alpha tocopherol products are ideal as vitamin E supplements, where they optimize dosage efficiency. Alpha-lipoic acid – another antioxidant – can be added to beverage powders in the form of a CAVAMAX® complex without reacting with the other ingredients. WACKER is constantly seeking to expand this product portfolio.

## Soluble Fiber

Fiber is an important component of healthy nutrition, but is lacking to a large extent in the diet of western industrialized nations. A natural alternative is available in the form of an  $\alpha$ -cyclodextrin, CAVAMAX® W6 F. This cyclodextrin is an indigestible but nevertheless completely fermentable soluble fiber, which can be added to food as a dietary supplement. CAVAMAX® W6 F is thermally stable even under acidic conditions and does not cause discoloration (browning). It does not alter the viscosity of beverages and dissolves in water to give a clear and colorless solution. Because it also lowers the glycemic index of starch-based foods, the  $\alpha$ -cyclodextrins is ideal for use as a fiber-containing additive for food such as beverages, dairy and bakery products, and breakfast cereals.



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## Expertise and Service Network on Five Continents

WACKER is one of the world's leading and most research-intensive chemical companies. In 2008, its sales totaled € 4.3 billion. Products range from silicones, binders and polymer additives for diverse industrial sectors to bio-engineered pharmaceutical actives and hyperpure silicon for semiconductor and solar applications. As a technology leader focusing on sustainability, WACKER promotes products and ideas that offer a high value-added potential to ensure that current and future generations enjoy a better quality of life based on energy efficiency and protection of the climate and environment.

Spanning the globe via five business divisions, 27 production sites and over 100 subsidiaries and sales offices, we have established a presence in all key economic regions and growth markets. With a 15,900-strong workforce, WACKER sees itself as a reliable innovation partner that develops trailblazing solutions for, and in collaboration with, its customers. WACKER also helps them boost their own success. Our technical centers employ local specialists, who assist customers worldwide in the development of products tailored to regional demands, supporting them during every stage of their complex production processes, if required.

WACKER e-solutions are online services provided via our customer portal and as integrated process solutions. Our customers and business partners thus benefit from comprehensive information and reliable service to enable projects and orders to be handled fast, reliably and highly efficiently. Visit us anywhere, anytime around the world at: **[www.wacker.com](http://www.wacker.com)**



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