

PRESS RELEASE

Number 48

K 2004: Cyclodextrins from WACKER SPECIALTIES Protect Foods against Off-Tastes Induced by Packaging Materials

Munich, October 20, 2004 – At the 16th International Plastics and Rubber Trade Show K2004 in Düsseldorf, WACKER SPECIALTIES presents a new technology offering lasting improvement in the quality of food packaging. The process is based on CAVAMAX® natural cyclodextrins. They can be introduced as efficient aroma barriers into, e.g., bottle caps or packaging materials.

Not many people like their potato chips or mineral water to taste of plastic. This undesirable off-taste is caused by aldehydes, often resulting from the polyolefin of the bottle cap, crown cork or packaging material itself. Though present in toxicologically insignificant amounts of only a few ppb, these compounds nevertheless result in annoying aromas or tastes. To put it into perspective, one ppb, part per billion, is the equivalent of a concentration of only six people in the entire world population. Such highly diluted impurities cannot usually be removed by conventional aroma filters.

In collaboration with the plastics and packaging specialist Cellresin Technologies of St. Paul, Minnesota (USA), WACKER has now put an effective stop to food off-tastes induced by packaging materials. The key to the new solution is cyclodextrins, produced and marketed

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by WACKER SPECIALTIES under the tradename CAVAMAX[®]. They are ring-shaped sugar molecules, known as CDs for short. Six to eight glucose molecules are linked up in the form of a cylindrical basket. Depending on the number of glucose units, a distinction is made between α , β and γ CDs.

The molecular basket formed by these CDs is a minor miracle. Thanks to its chemical structure, the cavity in the basket has a significant affinity for organic molecules.

That applies to the aldehydes from the packaging material or bottle top. In experiments, CAVAMAX[®] was able to reduce the concentration of undesirable aldehydes in water by 62 to 84 percent – depending on the type of CD and its initial concentration. The remaining concentration is below the taste threshold. As a result, the contents keep their taste unchanged for longer.

CDs from WACKER SPECIALTIES are a novel and efficient method for manufacturing closures and packaging materials meeting the food industry's strictest demands in every way. CAVAMAX[®] is made from natural starch, from which the desired cyclodextrins are produced by specific enzymes. As glucoses, cyclodextrins are of course also natural products.

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The company in brief:

WACKER is a globally active company with approx 15,600 employees generating annual sales of EUR 2.5 billion. WACKER has 22 production sites worldwide and a global sales network of over 100 subsidiaries and offices.

Siltronic

Hyperpure silicon wafers and monocrystals for semiconductor devices

WACKER SILICONES

Silicone fluids, rubber and resins; silanes; fumed silicas

WACKER SPECIALTIES

Redispersible powders and construction dispersions, solid resins, polyvinyl butyrals, fine chemicals and biotech products

WACKER POLYSILICON

Polysilicon for the semiconductor and photovoltaics industry