

PRESS RELEASE

Number 11

European Coatings Show 2019 WACKER Presents Highly Hydrophobic Pyrogenic Silica for Industrial Adhesives

Munich, February 20, 2019 – WACKER, the Munich-based chemical company, will be unveiling its new pyrogenic silica grade HDK® H21 at the 2019 European Coatings Show. The product was designed as an additive for adjusting the flow properties of polar adhesive systems. Despite its highly hydrophobic, i.e. water-repellent properties, the silica can be readily and efficiently incorporated into polar adhesive compounds. The rheological activity of HDK® H21 is extraordinarily high in epoxy, vinyl ester and polyurethane based adhesives, allowing customers to produce non-sag formulations for use in structural bonds for a number of industries. The European Coatings Show (ECS) will be held in Nuremberg, Germany, from March 19 to 21, 2019.

WACKER's pyrogenic silica HDK® is a white amorphous powder. It is based on highly pure hyperpure silicon dioxide and has a low density. This is also true for HDK® H21, a new pyrogenic silica that WACKER will be unveiling at this year's ECS. The product has a large specific particle surface area. Due to the nature of the particle surface, the silica can be readily incorporated into polar liquids, even though it is itself highly hydrophobic, i.e. non-polar.

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WACKER laboratory experiments show that HDK® H21 blends into an adhesive formulation significantly faster than other hydrophobic products. Nevertheless, it offers pronounced rheological activity and surpasses the effectiveness of other hydrophobic pyrogenic silicas, especially in highly polar systems. This makes HDK® H21 suitable for manufacturing high-performance adhesives efficiently and in less time and makes it possible to manufacture sag-resistant formulations.

As a consequence of its large specific surface area and its hydrophobicity, HDK® H21 gives pronounced shear-thinning properties to polar liquids. A suitable amount of pyrogenic silica will make the compound viscous when at rest and prevent sagging. When shear forces are applied, however, the viscosity drops. As a result, a polar industrial adhesive containing the new additive can be readily pumped and precisely applied. When modified with the appropriate concentration of HDK® H21, adhesive compounds will not run until fully cured – not even when applied in very thick layers and when the bonding surface is sloping or curved.

In this way, HDK® H21 creates the conditions for efficient adhesive application and a reproducible, flawless bond. The product also enhances the shelf life of reactive adhesive components. It prevents fillers from settling and, due to its hydrophobic character, barely interacts with the adhesive matrix.

HDK® H21 is perfect for use as a rheological additive in high-strength industrial adhesives, such as those in automotive industry bonding applications, in chemical dowels for the construction industry, and in bonds between the half shells of wind turbine rotor blades.

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New at ECS 2019: the WACKER Forum

WACKER will be devoting a total of 240 square meters of floor space to solutions for paints, coatings, construction and adhesives applications at the 2019 European Coatings Show. More than 70 experts will be on hand at Booth 1-510 in Hall 1 to discuss the products and their applications with interested parties. Making a new appearance this year will be the WACKER Forum, right beside the main booth. Here, 30-minute presentations aimed at an international specialist audience will be held on technology, trends and innovations under the motto "Let's talk about..." More information about the program of presentations at the WACKER Forum can be found at www.wacker.com/ECS2019.

Visit WACKER at the European Coatings Show 2019 in Hall 1, Booth 1-510.

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A high-performance adhesive formulated with HDK® H21. WACKER, the Munich-based chemical group, will be introducing the new pyrogenic silica at the 2019 European Coatings Show. The product was developed especially for the efficient manufacturing of non-sag industrial adhesives. (Photo: WACKER)



Industrial adhesives formulated with WACKER's HDK® H21 pyrogenic silica are extremely resistant to sagging and do not run on sloping or curved bonding surfaces. (Photo: WACKER)

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Note:

These photos are available for download at:
<http://www.wacker.com/pressreleases>

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The company in brief:

WACKER is a globally-active chemical company with some 13,800 employees and annual sales of around €4.9 billion (2017). WACKER has a global network of 23 production sites, 21 technical competence centers and 50 sales offices.

WACKER SILICONES

Silicone fluids, emulsions, rubber grades and resins; silanes; pyrogenic silicas; thermoplastic silicone elastomers

WACKER POLYMERS

Polyvinyl acetates and vinyl acetate copolymers and terpolymers in the form of dispersible polymer powders, dispersions, solid resins and solutions

WACKER BIOSOLUTIONS

Biotech products such as cyclodextrins, cysteine and biologics, as well as fine chemicals and PVA solid resins

WACKER POLYSILICON

Polysilicon for the semiconductor and photovoltaic industries