

Evonik extends portfolio of silane-modified polymers for construction and adhesive industries

April 4, 2017

With four new products, the Interface & Performance Business Line of Evonik Nutrition & Care GmbH is extending its product portfolio for the construction and adhesive industries. In early April, the company presented its silane-modified polymers TEGOPAC® Bond 160, TEGOPAC® Bond 170, TEGOPAC® RD 1, and TEGOPAC® RD 2 at the European Coatings Show in Nuremberg, Germany.

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Under the brand names Polymer ST and TEGOPAC®, Evonik supplies a range of silane-modified polymers which are used as binding agents in the manufacture of adhesives and sealants. The products enable the development of classification-free formulations for different application areas.

Silane-modified polymers of the TEGOPAC® brand differ from conventional silane-terminated systems by way of their structure: The reactive network units in the polymer structure are arranged in a pendant position. This specific arrangement results in a modified curing behavior and modified properties of the formulations. The special polymers have excellent elastic recovery, very good through-cure properties in surface applications, and improved temperature and water resistance. In addition, during the curing reaction, ethanol is released. For this reason, polymers of the TEGOPAC® brand can be used to manufacture methanol- and plasticizer-free adhesive and sealant formulations.

TEGOPAC® Bond 160 features low viscosity and is ideally suited to applications where good flow properties are required. Formulations with a high filler content are also possible. Sealants based on TEGOPAC® Bond 160 can also be covered with another coating of the formulation after 24 hours. The adhesive properties between the layers of sealant are excellent.

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In combination with its good UV stability, this makes the polymers an important component of many roof sealants.

TEGOPAC® Bond 170 is a universally applicable polymer with excellent elastic recovery properties and high elasticity. It is

ideally suited to applications in façades, as a raw material in assembly adhesive formulations, or for the development of liquid-membrane sealing products. Due to its high transparency, TEGOPAC® Bond 170 is also frequently used as a raw material for transparent adhesive and sealant formulations.

TEGOPAC® RD 1 and TEGOPAC® RD 2 are silane-modified reactive diluents, which reduce the viscosity of a formulation. In this case, part of the main polymer – such as TEGOPAC® Bond 170, for example – is replaced with the reactive diluent. It is also possible to use TEGOPAC® RD 1 and TEGOPAC® RD 2 in an adhesive and sealant formulation, in place of a plasticizer. Since the reactive diluents are incorporated in the polymer network during curing, migration-free adhesive and sealant formulations can be produced.

To develop the optimal formulation for the relevant end-use application, it is important to select the appropriate base polymer. Also, when creating a formulation with silanes, fillers, catalysts and other components, in-depth expertise and experience is required to achieve optimal results. With its comprehensive technical service and pool of experts, Evonik supports the development work carried out by its customers. This includes guiding formulations and formulation patterns and also individual consultancy on process design and extensive analytical evaluations.



Caption:

Silane-modified polymers TEGOPAC® Bond 160, TEGOPAC® Bond 170, TEGOPAC® RD 1, and TEGOPAC® RD 2 are important components of many roof sealants.

Company information

Evonik, the creative industrial group from Germany, is one of the world leaders in specialty chemicals. Profitable growth and a sustained increase in the value of the company form the heart of Evonik's corporate strategy. Evonik benefits specifically from its innovative prowess and integrated technology platforms. Evonik is active in over 100 countries around the world with more than 35,000 employees. In fiscal 2016 the enterprise generated sales of around €12,7 billion and an operating profit (adjusted EBITDA) of about €2.165 billion.

About Nutrition & Care

The Nutrition & Care segment is led by Evonik Nutrition & Care GmbH and contributes to fulfilling basic human needs. That includes applications for everyday consumer goods as well as animal nutrition and health care. This segment employed about 7,500 employees, and generated sales of around €4.3 billion in 2016.

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