

Evonik develops PEBA powder for 3D printing

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Evonik has developed the world's first flexible plastic material based on PEBA (polyether block amide) for use in 3D printing. The new high-performance powder stands out for its high elasticity and strength and is suitable for a variety of powder-based 3D printing technologies.

Specialized Press Contact
Janusz Berger
High Performance Polymers
Phone +49 2365 49-9227
janusz.berger@evonik.com

3D printed parts made from the new PEBA powder show a high degree of flexibility, excellent resistance to chemicals and outstanding durability over a wide temperature range from -40°C to 90°C. The powder is also ideally suited for the manufacture of functional 3D high-tech plastic parts - for prototypes as well as series products.

Innovative material for individual solutions

"Flexible polymer materials significantly expand the options for additive manufacturing because they allow us to realize new, demanding applications in attractive markets," says Fabian Stoeber, senior product manager for polymers at EOS, the global technology and quality leader for high-end solutions in the area of additive manufacturing from Germany. "In addition, the variety of materials not only enables us to produce individual high-tech functional components, but also to develop much more sophisticated 3D concepts that make use of the entire material range."

Evonik's PEBA material is suitable for a variety of powder-based 3D printing technologies such as laser sintering (LS), high speed sintering (HSS) or binder jetting.

Successful cooperation between Evonik and EOS

The flexible synthetic powder was optimized for use in EOS laser sintering systems as part of an intensive development collaboration between the specialty chemicals company and the leading technology provider for industrial 3D printing of metals and polymers. It has been successfully adopted into the material portfolios of multiple service providers. EOS markets the powder material under the name "PrimePart ST".

Evonik Resource Efficiency GmbH
Rellinghauser Straße 1-11
45128 Essen
Phone +49 201 177-01
Fax +49 201 177-3475
www.evonik.com

Supervisory Board
Dr. Harald Schwager, Chairman
Managing Directors
Dr. Claus Rettig, Chairman
Dr. Johannes Ohmer
Simone Hildmann
Alexandra Schwarz

Registered Office: Essen
Register Court: Essen Local Court
Commercial Registry B 25783
VAT ID no. DE 815528487

“New innovative products that are developed in bespoke projects in close cooperation with our customers form an important cornerstone of our organic growth,” notes Thomas Große-Puppenthal, head of the Engineered Products Product Line at Evonik.

The development of the flexible high-performance powder expands Evonik’s existing product portfolio of synthetic materials for 3D printing. The specialty chemicals company is a world leader in the production of polyamide 12 powders (PA 12), which have been used in 3D printing for over 20 years. Evonik produces the powder materials at its largest global site, the Marl Chemical Park.

Learn more about high-performance polymers from Evonik at our booth 4117 in Hall A4 at 26. FAKUMA, October 16–20, in Friedrichshafen, Germany.

About Evonik

Evonik is one of the world leaders in specialty chemicals. The focus on more specialty businesses, customer-orientated innovative prowess and a trustful and performance-oriented corporate culture form the heart of Evonik’s corporate strategy. They are the lever for profitable growth and a sustained increase in the value of the company. Evonik benefits specifically from its customer proximity and leading market positions. Evonik is active in over 100 countries around the world with more than 36,000 employees. In fiscal 2017, the enterprise generated sales of €14.4 billion and an operating profit (adjusted EBITDA) of €2.36 billion.

About Resource Efficiency

The Resource Efficiency segment is led by Evonik Resource Efficiency GmbH and produces high performance materials and specialty additives for environmentally friendly as well as energy-efficient systems to the automotive, paints & coatings, adhesives, construction, and many other industries. This segment employed about 10,000 employees, and generated sales of around €5.4 billion in 2017.

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