

Evonik's research hub in Singapore launches new product line of photopolymers for 3D printing

- Material campaign continued with new photopolymers of the INFINAM® brand for infinite 3D applications
- Market position strengthened in the long term by entry into photopolymer 3D printing technologies
- Products were conceptualized and invented from a team of research scientists in Singapore

Singapore. Evonik has developed two photopolymers for industrial 3D printing applications and introduces them under the brand names INFINAM® TI 3100 L and INFINAM® ST 6100 L. The two ready-to-use materials were conceptualized and invented in Evonik's research hub in Singapore. They mark the start of a new product line of polymer resins suitable for use in common VAT polymerization technologies such as SLA or DLP. The specialty chemicals company will present the new products for the first time at the TCT Asia trade show from May 26–28 in Shanghai.

"With the new product line, we are entering the market-relevant photopolymer technology stream, strengthening our long-term market position as materials experts for all major polymer-based 3D printing technologies," says Dr. Dominic Störkle, head of the Additive Manufacturing Innovation Growth Field at Evonik. "With the new ready-to-use formulations, we are also continuing our materials campaign and driving industrial-scale 3D printing as manufacturing technology along the entire value chain."

Starting signal for a new photopolymer product line

The first high-performance material from Evonik's photopolymer product family leads to high toughness and impact-resistant 3D parts. The combination of properties makes INFINAM® TI 3100 L the new standard for additive manufacturing of industrial components using VAT polymerization technologies such as SLA and DLP. The impact resistance measured on printed components is 30 J/m³ with a high elongation at break of 120 percent. The new material can therefore withstand strong impact or permanent mechanical effects such as pressing or impact. The range of

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possible applications extends from industrial to automotive parts and individual applications in the consumer goods sector, which, in addition to design-free forms, require strong mechanical loads in object use.

The second formulation is setting-up a new benchmark in high strength photo-resin category with a combined tensile strength of 89 MPa, flexural stress of 145 MPa and HDT of 120 °C, which fills the material gap in ultra-high strength photopolymers. These special material properties make INFINAM® ST 6100 L the material of choice for applications which need high temperature resistance combined with high mechanical strength.

"With INFINAM® TI 3100 L and INFINAM® ST 6100 L we have brought the group's first photopolymer materials for additive manufacturing to market maturity. In doing so, we draw on the enormous chemical expertise of our researchers in component development and formulation. On this basis, we can offer the market a unique product with excellent properties and help our customers to conquer new application areas," says Dr. Rainer Hahn, Head of Evonik's photopolymer market segment in the Additive Manufacturing Innovation Growth Field.

INFINAM® Photopolymers for SLA and DLP

The new line of photopolymers are ready-to-use, high-performance formulations that can be processed on a wide range of common SLA and DLP machines commercially available on the market.

Evonik is bundling its expertise in 3D printing in the group's additive manufacturing innovation growth field, which is driven by the research team in Singapore. The strategic focus here is on the development and manufacturing "ready-to-use" high-performance materials along common technologies. In this context, Evonik recently reorganized its product range of ready-to-use 3D printing materials under the new INFINAM® brand. Collaborations with customers and partners are an important innovation driver.



Photo caption: Evonik launches new product line of photopolymers for 3D printing



Photo caption: INFINAM® TI 3100 L – the first high-performance material of Evonik's photopolymer product family is a high toughness light-curing resin.

Company information

Evonik is one of the world leaders in specialty chemicals. The company is active in more than 100 countries around the world and generated sales of €12.2 billion and an operating profit (adjusted EBITDA) of €1.91 billion in 2020. Evonik goes far beyond chemistry to create innovative, profitable and sustainable solutions for customers. More than 33,000 employees work together for a common purpose: We want to improve life today and tomorrow.

Asia Pacific is a strong driving force of the global economy and an important source of innovation. Consequently, Evonik endeavors to further grow its business in the region. Sales reached €2.84 billion in 2020 and the company employs over 5,000 people at more than 50 production sites in Asia Pacific.

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