

Alternative polyols, reactive resin systems, and elastomers

RAMPF Eco Solutions and RAMPF Polymer Solutions present innovative products and solutions at UTECH Europe 2018 in Maastricht – Booth 805

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Grafenberg, May 17, 2018. RAMPF is presenting its market-leading expertise for the manufacture of alternative polyols as well as high-performance resin systems and elastomers at UTECH Europe 2018 from May 29 - 31 in Maastricht – Booth 805.

At UTECH Europe 2018, the international RAMPF Group will be represented by its core competencies Eco Solutions and Polymer Solutions:

- > RAMPF Eco Solutions is an expert in chemical solutions for manufacturing high-quality alternative polyols using PU and PET waste materials, PSA as well as renewable and bio-based raw materials. It also develops and constructs multi-functional plants for polyol production based on PU, PET/PSA, polyesters, and biomonomers.
- > RAMPF Polymer Solutions is a leading developer and manufacturer of reactive resin systems based on polyurethane, epoxy, silicone, and hotmelts. The product portfolio includes liquid and thixotropic sealing systems, electro and engineering casting resins, edge and filter casting resins, and adhesive systems.

The highlights at UTECH 2018:

Recycled polyols made to measure



RAMPF Eco Solutions based in Pirmasens, Germany, has been developing high-quality alternative polyols for over 25 years. In two of the largest facilities in Europe, tailored polyols are industrially manufactured from PU residues using a specially developed chemical process. The resulting basic polyols are integrated



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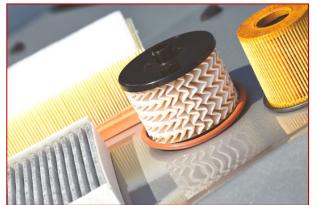
back into the customer's production process, creating a cycle that delivers both environmental and economic benefits. A special focus is also placed on using renewable and bio-based raw materials for the manufacture of polyols.

"Alternative polyols made by RAMPF are of the highest quality and precisely tailored to the production of the customer. This way, the dependence on volatile markets is lessened and raw material and energy consumption reduced", explains Marco Werth, Director of Sales & Marketing at RAMPF Eco Solutions.

Reactive resins based on polyurethane, epoxy, silicone, and hot-melts

Reactive resin systems made by RAMPF Polymer Solutions are used for sealing, casting, bonding, design, protection, and insulation in various industries and applications. "We provide customers with high-quality products and solutions, tailored precisely to their needs. Our service is all-encompassing – from material, plant, and process technology to product development, market launch, and after-sales service", says Dr. Frank Birkelbach, Sales & Marketing Director at RAMPF Polymer Solutions. "We also work closely together with Eco Solutions, as we place particular emphasis on the use of renewable raw materials."

Casting systems for liquid filter production



For the air and hybrid filter industry, RAMPF Polymer Solutions has developed a wide range of liquid gasket and casting systems based on polyurethane (RAKU® PUR), epoxy (RAKU® POX), and hotmelts (RAKU® MELT). These exhibit fast processing times, very high chemical resistance, high temperature resistance, and high resistance to mechanical stress.

RAKU® PUR elastomers



Elastomer systems from RAMPF Polymer Solutions impress with their high elongation and shear strength, high chemical resistance, exceptional flow properties, very low water absorption, very low shrinkage, and excellent stability. These elastomers are used, amongst others, for concrete mold and clone production of natural stone imitations (picture).



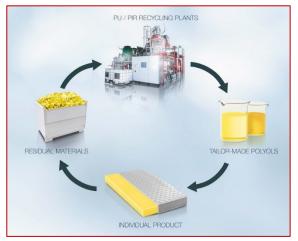
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Multi-functional plants for polyol production



RAMPF Eco Solutions is the market-leading, end-to-end partner for the design and construction of multi-functional plants for manufacturing customized alternative polyols using PU waste materials, PET/PSA, polyesters such as PLA and PHB, and biomonomers. RAMPF combines its many years of experience in developing innovative chemical solutions with the comprehensive industrial plant engineering expertise of its partners.

"With a customized, turnkey chemical plant from RAMPF,

customers establish an ecologically sustainable production cycle that sets them apart from the competition. Additional economic benefits are the significantly lower transportation and disposal costs", Michael Kugler, Plant Manager at RAMPF Eco Solutions, points out.

Visit RAMPF at UTECH Europe 2018 - Booth 805!



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The RAMPF Group stands for **engineering and chemical solutions** and caters to the economic and ecological needs of industry.

The range of competencies includes:

- > production and recycling of **materials** for modeling, lightweight construction, bonding, and protection;
- technical production systems for precise, dynamic positioning and automation, as well as technologies for complex composite parts production;
- > comprehensive range of **solutions and services**, particularly for innovative customer-specific requirements.

With this know-how, RAMPF helps its customers to achieve profitable and sustainable growth.

The Group secures its presence on the international markets with 800 employees and six core competencies:

- > RAMPF Machine Systems based in Wangen (Göppingen), Germany, develops and produces multi-axis positioning and moving systems, trunk machines, and basic machines based on high-precision machine beds and machine bed components made from alternative materials.
- > RAMPF Production Systems based in Zimmern o. R., Germany, develops and produces mixing and dispensing systems for bonding, sealing, foaming, and casting a wide variety of materials. The company also offers a wide range of automation skills relating to all aspects of process engineering.
- > RAMPF Composite Solutions based in Burlington, Ontario, Canada, is a holistic composites supplier to companies in the aerospace and medical industries. The company offers a complete suite of services including composite part design and engineering, metal-to-composite conversion engineering, and composite manufacturing to very tight tolerances.
- > RAMPF Eco Solutions based in Pirmasens, Germany, develops chemical solutions for the manufacture of high-quality alternative polyols from PU and PET waste materials. This expertise is also put to use in the planning and construction of customer-specific facilities for manufacturing polyols.
- > RAMPF Polymer Solutions based in Grafenberg, Germany, develops and produces reactive resin systems based on polyurethane, epoxy, and silicone. Its product portfolio includes liquid and thixotropic sealing systems, electro and engineering casting resins, edge and filter casting resins, and adhesives.
- > **RAMPF Tooling Solutions** based in Grafenberg, Germany, develops and produces board and liquid materials for cutting-edge modeling and mold engineering. The range of skills includes made-to-measure services and products such as pastes, large-volume and full-size castings for Close Contour models, and prototyping systems.

RAMPF has subsidiaries in Germany, the U.S., Canada, Japan, and China.

All RAMPF companies are united under a holding company – RAMPF Holding GmbH & Co. KG – based in Grafenberg, Germany.

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