Latest Release of e-Xstream engineering's Multi-Scale Material Modeling Software Adds Thirteen High-Performance Solvay Resins

Expanded material modeling platform enables design engineers to simulate
fiber-reinforced composite parts more accurately

PARIS, France, March 11, 2015 – Solvay Specialty Polymers, a leading global supplier of high-performance thermoplastics, announced today at JEC Europe (Booth #D51, Level 7.2) that 13 of its advanced polymer grades were included in the latest release of the Digimat® platform, an expansive materials database and simulation tool from e-Xstream engineering, an MSC Software Company, who is also exhibiting at JEC Europe (Booth #K47, Level 7.3). The additional polymer grades from Solvay now allow Digimat® to offer greatly expanded capabilities for computer design and simulation of fiber-reinforced composite parts that target automotive, electronics, food-contact and other applications.

The 13 new additions to the simulation platform's Digimat-MX® database draw from Solvay's Amodel® polyphthalamide (PPA), Ixef® polyarylamide (PARA), Veradel® polyethersulfone (PESU) and Ryton® polyphenylene sulfide (PPS) product families and deliver a selection of mechanical properties across a range of temperatures to precisely meet customer requirements. Notably, Solvay's Ixef® and Veradel® materials are the first PARA and PESU resins to ever appear in e-Xstream's materials database, which provides leading-edge computer modeling for designing fiber-reinforced thermoplastic parts. Other grades from Solvay's AvaSpire® polyaryletherketone (PAEK) and KetaSpire® polyetheretherketone (PEEK) product lines were added to the Digimat-MX® database in 2013.

"Solvay has been a leading innovator in metal replacement for more than 25 years and our continuing partnership with e-Xstream is critical to helping customers effectively simulate the mechanical performance of our materials when designing lightweight fiber-reinforced thermoplastic composite parts," said Michel Dubois, global technical marketing manager for Solvay Specialty Polymers. "The addition of these 13 Solvay grades to the Digimat-MX® library signals an important new phase in our support to design and simulation experts seeking to replace metal parts with lightweight advanced polymers and composites."

More than just software, Digimat® is a material and structure modeling platform that allows engineers to perform both micro- and macro-scale analyses of a broad range of composite materials to calculate their mechanical, thermal and electrical properties and predict how they will perform in downstream applications. Digimat-MX®, the Material eXchange system, is a detailed database that provides the platform with accurate material models for simulating the design and performance of select commercial reinforced plastics.

"The efficiency, accuracy and value of the Digimat® platform's predictive modeling capabilities is founded on the quality of the polymer data and the validated material models shipped in Digimat-MX®," said Roger Assaker, CEO of e-Xstream engineering and chief material strategist for MSC Software. "Adding these 13 Solvay grades to our software's broad list of high-quality material models allows Solvay and e-Xstream customers greatly expanded design flexibility. For example, it now allows automotive designers to explore a broader range of models when designing more fuel-efficient and high-performing vehicle designs."

Among the new materials added to Digimat-MX® are six automotive grades of Amodel® PPA, including Solvay's A-1133, A-6135, AS-1145, AS-1933, AS-1945 and AS-4145 grades. Compared to standard polyamides, these Amodel® PPA grades offer higher strength and stiffness at elevated temperatures, better retention of properties in humid environments and greater resistance to a broader range of chemicals. Their lower water absorption rate also minimizes changes in strength and stiffness at high humidity levels.

Two FDA-approved Amodel® grades – FC-1140 and FC-1150 – were also added to the Digimat-MX® library. Designed for high strength and stiffness, these grades combine excellent thermal properties, low water absorption and good hydrolytic stability for food service and consumer applications such as coffee machines and ovens.

Ixef® 1022, 1521 and 1622 PARA resins offer a unique combination of strength and aesthetics, making them ideal for modeling complex parts that require both strength and a smooth surface. The tensile and flexural strength of Ixef® compounds are similar to many cast metals and alloys at ambient temperature. Despite their high glass loadings, the smooth, resin-rich surface delivers a high-gloss, glass-free finish that's ideal for painting, metallization or producing a naturally reflective shell.

Veradel® AG-330 PESU combines good chemical resistance with a high heat deflection temperature of 204°C (399°F), making it suitable for baby bottles and other food service applications. It is also inherently flame retardant for use in electronic components and testing devices.

Ryton® R-4-200BL PPS offers a unique combination of properties and a cost/performance balance unmatched by many other engineering thermoplastics. Key properties include thermal stability, dimensional stability, chemical resistance and inherent flame retardance.

Other Solvay high-performance polymers, including Omnix® HPPA and heat-stabilized grades of Amodel® PPA, are expected to be added to e-Xstream's Digimat-MX® system in the future.

A long-term partner of e-Xstream, Solvay has used Digimat–MX® software internally to offer advanced computer modeling of fiber-reinforced designs as a service to its customers. While the company will continue to provide this value, the expanded Digimat-MX® database now allows current and potential customers to perform their own computer simulations based on Solvay materials. To help customers fully exploit the properties of its high-performance polymers in product design, Solvay has developed dedicated computer-aided engineering procedures based on Digimat® that have undergone thorough internal validation at its European laboratory, based in Brussels.

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About e-Xstream engineering
Founded in 2003, e-Xstream engineering (www.e-Xstream.com) is a software and engineering services company 100% focused on the multi-scale modeling of composite materials and structures. The company helps customers, material suppliers, and material users across many industries reduce the cost and time needed to engineer innovative materials and products using Digimat®, the nonlinear multi-scale material and structure modeling platform. Since September 2012, e-Xstream engineering is a wholly owned subsidiary of MSC Software. The e-Xstream engineering corporate logo and Digimat® logo are trademarks or registered trademarks of e-Xstream engineering SA. http://www.e-Xstream.com.

About Solvay Specialty Polymers

Solvay Specialty Polymers manufactures over 1500 products across 35 brands of high-performance polymers – fluoropolymers, fluoroelastomers, fluorinated fluids, semi-aromatic polyamides, sulfone polymers, aromatic ultra-high performance polymers, high-barrier polymers and cross-linked high-performance compounds – for use in Aerospace, Alternative Energy, Automotive, Healthcare, Membranes, Oil and Gas, Packaging, Plumbing, Semiconductors, Wire & Cable, and other industries. Learn more at www.solvayspecialtypolymers.com.

As an international chemical group, **SOLVAY** assists industries in finding and implementing ever more responsible and value-creating solutions. Solvay generates 90% of its net sales in activities where it is among the world's top three players. It serves many markets, varying from energy and the environment to automotive and aeronautics or electricity and electronics, with one goal: to raise the performance of its clients and improve society's quality of life. The group is headquartered in Brussels, employs about 26,000 people in 52 countries and generated 10.2 billion euros in net sales in 2014. Solvay SA (**SOLB.BE**) is listed on **NYSE EURONEXT** in Brussels and Paris (Bloomberg: **SOLB:BB** - Reuters: **SOLB.BR**).

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