



Press Release

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Innovative composite materials and solutions for automotive applications

Henkel highlights advanced automotive lightweight composite applications at JEC World 2017

Düsseldorf, Germany – At JEC World 2017, Henkel is putting the spotlight on high performance composites that provide car makers with new ways to design innovative lightweight solutions into their vehicles.

Henkel, a leading worldwide provider of high-impact solutions based on adhesives, sealants and functional coatings, will be on Booth D28 in Hall 6 at the world's biggest composites show, taking place from March 14 to 16 at the Paris Nord Villepinte Exhibition Center. During the event, Henkel experts will provide information on the increasingly broad range of products and system solutions that the company has created for the composites industry.

Cost-efficient production of composite components on a large scale

High performance lightweight composites based on glass or carbon fibers in thermoplastic and thermosetting resins can be tailored to provide the right levels of strength where they are needed. For vehicle makers, that translates into reduced fuel consumption and CO₂ emissions along with enhanced safety and crash behavior. Henkel works closely with its partners along the value chain to create ideal integrated solutions in composites that can be made cost-effectively, in high volumes, and at high speed.

In pole position on the Henkel stand at JEC will be a prime example of what is now possible with automotive composites created with Henkel materials and technical know-how: a ground-breaking leaf spring based on Loctite MAX 2 polyurethane matrix resin and continuous glass fiber reinforcement. The leaf spring, which debuted in late 2014 on the rear suspension of the Volvo XC90 premium crossover SUV, now features at the core of a lightweight rear axle concept implemented on various models. Volvo's premium V90 estate and S90 models now also incorporate the highly innovative design, which is produced using high-pressure resin transfer molding, HP-RTM.



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With its low viscosity, Loctite MAX 2 rapidly fills the mold and quickly yet gently impregnates the fiber material, resulting in short injection times. The polyurethane resin's curing rate is also substantially higher than that of comparable epoxy resins, so total cycle times are shorter too.

Many automotive OEMs are also considering carbon fiber reinforced composites for wheels in place of aluminum. Henkel will highlight a new product in its Loctite MAX resin series that is suitable for use in production of such composite wheels, thanks to its very high temperature resistance and excellent toughness. The new Loctite MAX resin withstands service temperatures beyond 200°C and has a very high durability performance. As with Loctite MAX 2, its high curing speed and ability to be injected quickly facilitate high volume production.

A new binder technology for use in composite preforms complements Henkel's resin portfolio with. Loctite FRP 2000 has excellent compatibility with both polyurethane and epoxy matrix resins. Its high mechanical strength means that only small amounts of the binder are needed in the preforming process; it is also well suited to production of parts with complex shapes.

Industrial adhesives for bonding multi-material assemblies

Henkel will also present its newest innovations for adhesives designed to meet automotive composite industry needs for a reliable and easy production process. As automakers increasingly turn to fiber-reinforced plastics to at least partly replace steel or aluminum, there is a growing need to find effective ways to bond these different materials to one another. In addition to their chemical characteristics, metals and composites also differ in terms of their coefficients of thermal expansion (CTE) the amount they expand and contract as ambient temperatures rise and fall. Producers of lightweight hybrid structures need adhesives that offer not only high strength but also high elasticity that accommodates these differences.

Answering this call, Henkel will present a new adhesive for such hybrid material concepts at JEC World 2017. Loctite UK 2015, which is based on two-component polyurethane technology, is ideal for use on structural body parts, regardless of whether they are made of fiber-reinforced plastics, e-coated steel or e-coated aluminum.



Henkel will also highlight how its close cooperation with customers in development of resins, binders and multi-substrate adhesives facilitates their incorporation into new composite concepts. Last year, Henkel opened the Composite Lab, a state-of-the-art test facility, in Heidelberg, Germany. Here automotive customers can work with Henkel experts to develop and test composite parts, and also optimize production process conditions. They can carry out trials on Henkel's own HP-RTM equipment, which has resin injection units for polyurethanes and epoxies coupled to a 380-ton press.

More information on Henkel's composites know-how, portfolio and technologies is available at www.composite-lab.com.

Henkel automotive presentation at JEC

During the show, Frank Kerstan, Global Program Manager Automotive Composites at Henkel, will give a technical presentation about new matrix resins and multi-substrate adhesives for automotive large-scale production; this will be on Thursday March 16, at 12.30 in Hall 5A.

About Henkel

Henkel operates globally with a well-balanced and diversified portfolio. The company holds leading positions with its three business units in both industrial and consumer businesses thanks to strong brands, innovations and technologies. Henkel Adhesive Technologies is the global leader in the adhesives market – across all industry segments worldwide. In its Laundry & Home Care and Beauty Care businesses, Henkel holds leading positions in many markets and categories around the world. Founded in 1876, Henkel looks back on more than 140 years of success. In 2016, Henkel reported sales of 18.7 billion euros, adjusted operating profit of 3.2 billion euros. Its three top brands, Persil (detergent), Schwarzkopf (hair care) and Loctite (adhesive) generated more than 6 billion euros in combined sales. Henkel employs more than 50,000 people globally – a passionate and highly diverse team, united by a strong company culture, a common purpose to create sustainable value, and shared values. As a recognized leader in sustainability, Henkel holds top positions in many international indices and rankings. Henkel's preferred shares are listed in the German stock index DAX. For more information, please visit www.henkel.com.

Photo material is available at www.henkel.com/press.

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The following material is available:



Henkel highlights advanced automotive lightweight composite applications at JEC World 2017.
(Photo: Henkel, PR022)



A fiber-reinforced composite leaf spring is being used in the chassis of the new Volvo XC90, a premium crossover SUV of which the innovative rear axle concept is to serve as a platform for other model series as Volvo S90 and V90. (Photo: Henkel, PR022)

This press release and relevant photography can be downloaded from www.PressReleaseFinder.com.
Alternatively for very high resolution pictures please contact Kevin Noels (knoels@emg-pr.com, +31 164 317 011).