



## Press Release

January 31, 2018

On the road to a new generation of silent and intelligent automotive tires

### Henkel offers Loctite tire bonding solution with outstanding adhesion for acoustic foams and integrated sensors

Düsseldorf, Germany – To pave the road towards next-generation automotive tires with effective cavity noise reduction and increased sensor technology, Henkel has introduced Loctite SI 5930 FIT, an RTV silicone rubber adhesive for in-tire bonding applications. The product provides excellent adhesion properties on all common tire rubbers and is compatible with different acoustic foams as well as tire release agents. As a MEKO-free and odorless solution it also meets strict HSE standards. In addition, Henkel supports tire manufacturers and suppliers with a comprehensive bonding test program and through collaborations with leaders in tire market consulting consultant and dedicated wheel manufacturing equipment.

The continuous reduction of driving noises in automotive engineering has resulted in a greater focus of designers on the noise resonating from tire cavities. Tire manufacturers are increasingly adopting new acoustic foams that are bonded to the inside surface of the tread material in order to minimize the noise transfer. At the same time, there is a growing demand for in-tire bonded sensors to measure performance parameters such as tire pressure, tread depth or contact area.

#### Sustainable adhesive solution with excellent bonding performance

“A critical requirement of these functional tire designs is the long-term reliable bonding strength of the adhesive material even under severe road, driving and weather conditions,” says Wim Boone, Senior Sales Engineer for Henkel. “Our Loctite SI 5930 FIT product has successfully demonstrated its adhesion performance from the tire production line to over one million kilometers of severe road testing.”

Loctite SI 5930 FIT (for Fix In Tire bonding of acoustic foam and sensors) is a one-component room temperature vulcanizing (RTV) silicone rubber adhesive supplied as thixotropic black paste with a tack-free time of  $\leq 15$  minutes, depending on ambient humidity. The material offers excellent adhesion on all common tire rubbers used in the automotive industry, including mixtures for trucks and two-wheelers.



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Likewise, extensive tests have confirmed the compatibility of Henkel's Loctite product with different release agents typically used in tire production and with various special acoustic foams developed for enhanced cavity noise reduction. Based on a proprietary adhesive technology proven in a wide range of plastic housing applications, Loctite SI 5930 FIT also provides the required bonding strength for in-tire mounted sensors. The result is a high-performance yet cost-efficient solution for an innovative new generation of low-noise intelligent summer, all-season and winter tires.

Fully cured, the Henkel adhesive offers a continuous operating temperature range of -50°C to +200°C, which is well above tire OEM standard specifications (120°C). Its outstanding bonding characteristics are complemented by excellent flexibility, with an elongation at break of ≥200 percent.

Moreover, Loctite SI 5930 FIT is an odorless product and free of methyl-ethyl-ketoximes (MEKO), which makes it a perfect choice for applications in line with more demanding health, safety and environmental standards (HSE).

#### **Comprehensive support for rapid implementation**

Several different brand tires with Loctite SI 5930 FIT bonded cavity noise reducing acoustic foam and integrated sensors are already on the road on various luxury vehicles. "However, major automotive OEMs and Tier 1 tire manufacturers are now also targeting to phase-in the technology in the wider market of high-volume medium-size and compact cars, and we have a number of non-disclosure agreements in place with leading customers that we expect to result in appropriate new tire introductions in the near future," Boone adds.

As part of its extensive support package offered to tire manufacturers, Henkel is running a global in-tire bonding test program where customers can evaluate the processing and adhesion performance of Loctite SI 5930 FIT. Apart from tensile shear and peel test procedures, this also includes a set-up for simulating extreme environmental conditions and temperature cycling up to 200°C in a climate chamber.

In addition, Henkel is actively collaborating with Pro-Sigma Consulting, an experienced tire market consultancy promoting silent tire bonding projects at OEMs and tire manufacturers worldwide, and with SEEB Automation (France), a leading manufacturer of tire wheel assembly equipment specializing in fully integrated solutions, including machines for automated in-tire foam bonding within a cycle time up to 12 seconds. Customers seeking to implement the Loctite SI 5930 FIT bonding technology in new tire projects can effectively leverage the know-how and experience of these partners to speed the time-to-market and maximize the cost efficiency of their next-generation products.



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#### **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](http://www.henkel.com).

**Photo material is available at [www.henkel.com/press](http://www.henkel.com/press).**

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The following material is available:



Extensive testing has confirmed the excellent adhesion strength and flexibility of Loctite SI 5930 FIT from Henkel for a wide range of tire rubbers, acoustic foams and release agents. The photo shows the set-up of a 90 degrees foam peel test.



Henkel has introduced Loctite SI 5930 FIT, an RTV silicone rubber adhesive for in-tire bonding applications for the next-generation automotive tires with effective cavity noise reduction and increased sensor technology.