

# PRESS RELEASE

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## K 2019 Preview

### WACKER Presents Liquid and Solid Silicone Rubber Grades with Enhanced Product and Processing Properties

**Munich, July 2, 2019 – WACKER, the Munich-based chemical group, announced numerous silicone innovations at the K 2019 Preview Press Conference in Düsseldorf, Germany, today. Key new products which will be presented at the 21. International Trade Fair for Plastics and Rubber in October include fire-resistant silicone elastomers, self-adhesive silicone rubber grades with extremely low-friction surfaces and ultrathin silicone laminates for electroactive applications. The focus will also be on liquid silicone rubber grades that, thanks to their greatly reduced volatiles content, do not necessarily require post-curing and thus unlock various advantages. A new silicone-based additive will also be making its debut, allowing compounders of thermoplastic elastomers to produce softer and more dirt-repellent plastics. Tradeshow visitors should make sure not to miss the new 3D silicone printer ACEO® Imagine Series K2. With multimaterial printing, novel auto-control technology and several technical enhancements in terms of both freedom of design and precision, the latest printer generation is setting new standards. The K 2019 trade fair takes place in Düsseldorf, Germany, from October 16 to 23.**

At the world's largest tradeshow for plastics and rubber, the Munich-based chemical group will be showcasing its innovations under the motto "Thinking Beyond" at its usual place – Booth A10 in Hall 6. On an area of 300 square meters, a multitude of novel products will be awaiting visitors, ranging from thermally conductive silicones for battery cooling in electric vehicles, flame-retardant silicone rubber for rolling stock and self-adhesive silicones with low-friction surfaces to electroactive silicone laminates for actuators and sensors.

"Product requirements on plastic and rubber materials have risen drastically over recent years. Some standard materials can no longer keep pace with this development," said Christian Gimber at today's K 2019 Preview press conference in Düsseldorf. "That is why more and more companies are counting on silicone elastomers. Thanks to their outstanding mechanical and chemical properties, silicones have become indispensable for solving demanding technical problems and developing and implementing innovative technologies."

This year, WACKER's booth will cover eight topics. One of these will focus on the advantages of liquid silicone rubber that contains very few volatile components. Since early 2019, this applies to ELASTOSIL® LR 3xxx, ELASTOSIL® LR 6xxx and SILPURAN® 6xxx silicones manufactured in Europe. Thanks to ultra-modern process technologies, WACKER has managed to slash the content of volatile Dx siloxanes in its liquid silicone rubber by at least 90 percent. By upgrading the LSR portfolio in this way, the company is enabling manufacturers of silicone parts to meet regulatory requirements and industry as well as customer needs more readily and reliably than

ever before. WACKER's initiative is setting new industrial standards worldwide.

The ELASTOSIL® LR 5040 product line shows what is possible and what advantages the new standard offers. These high-performance silicones cure to form elastomers that possess the same mechanical properties without thermal treatment as a product that has been post-cured. Users can skip the lengthy and costly process step of post-curing altogether. Due to their high purity, parts made of ELASTOSIL® LR 5040 are suitable for food-contact applications and can be used in line with the recommendations of the German Federal Institute for Risk Assessment (BfR) and the US Food and Drug Administration (FDA). They also meet the criteria of selected biocompatibility tests in ISO 10993 and US Pharmacopeia (Class VI).

ELASTOSIL® LR 5040 will also be at the center of this year's injection-molding demonstration at the WACKER booth. Here, food-contact parts will be produced out of the liquid silicone rubber during the tradeshow. A HoloLens will furthermore offer virtual insights into the technology and functions of the injection-molding machine provided by Krauss Maffei (tool: ACH Solution).

► **Solid Silicone Rubber for New Fire-Safety Standard**

Fire safety in rolling stock has long been governed by national standards. With the EN 45545-2 standard in effect across Europe, the safety requirements that manufacturers of rolling-stock components must meet have become stricter. WACKER's existing product portfolio includes solid and liquid silicone rubber solutions already certified for a large portion of the applications mentioned in

EN 45545-2 – especially those subject to the standard's R22 and R23 requirement sets.

Now, to allow manufacturers to produce large-format bellows and profiles in compliance with the new fire-safety codes, the Munich-based chemical group has added a new grade of flame-retardant solid silicone rubber to the product portfolio. ELASTOSIL® R 771 meets today's fire-safety codes and enables the manufacture of rolling-stock components in accordance with the R1 requirement set. This makes WACKER one of the first silicone producers worldwide able to offer a certified silicone rubber compound approved for the new standard.

EU fire-safety codes are also being increasingly applied in public buildings. That makes ELASTOSIL® products suitable for a variety of applications in this area as well. Because silicones produce significantly less smoke in a fire and, unlike halogenated plastics, will not generate the harmful gas hydrogen chloride, ELASTOSIL® R 771 is also especially suitable for use in parts of building that are highly exposed to fires such as fire curtains, insulation, and seals for windows and doors.

► **Self-Adhesive Liquid Silicones with Less Friction**

WACKER has expanded its portfolio of self-adhesive liquid silicone rubber with two further product lines: ELASTOSIL® LR 3671 for applications in food technology and ELASTOSIL® LR 3675 for automotive applications. The company has combined in these products two technologies that are firmly established in the silicone compounding industry, with a proven track record in numerous applications:

silicones with self-adhesive properties and grades featuring intrinsically low-friction surfaces.

The new liquid silicone rubber grades adhere to metals and selected thermoplastics and cure to form elastomers with dry, low-friction surfaces. They thus enable cost-effective large-scale production of injection-molded hard/soft composites.

The ELASTOSIL® LR 3671 product line was specially designed for food contact. After **appropriate** post-curing, **articles** are safe for food contact pursuant to the recommendations of the German Federal Institute for Risk Assessment (BfR) and the requirements of the US Food and Drug Administration (FDA). Potential applications include, for example, shaft seals in food processors and sealing elements in closures of thermos flasks.

The ELASTOSIL® LR 3675 product line was developed for use in automotive technology. Its special formulation ingredients have been chosen to form an exceptionally strong bond with the hard component, and after curing it already exhibits excellent elastic extension recovery and very good mechanical properties even without post-curing. This allows manufacturers to eliminate that very time-consuming, energy-intensive step from their processes. Areas of application include connector housings with radial seals applied by injection molding and single-wire seals.

► **Silicone Laminate for Sensors and Actuators**

NEXIPAL® is a novel silicone laminate with electroactive properties. It consists of several ultrathin precision silicone films that are coated

with electrically conductive material prior to lamination. The result is an actuator that creates movement, as soon as electrical voltage is applied.

The laminates can furthermore be used to measure mechanical deformation electrically. Thus, NEXIPAL® can also serve as a sensor. The product is wear-free, compact and energy saving, and ideal for use in innovative applications. Tablet displays equipped with NEXIPAL® are able to create vibrations and haptic feedback which simulate the shape of keys or control panels that can be operated blindly by touch. Such a feature can be especially useful in automotive applications.

► **GENIOPLAST® Pellet 345**

GENIOPLAST® Pellet 345 complements WACKER's portfolio of silicone-based additives for the compounding of thermoplastic polymers. The product has been specifically developed with thermoplastic polyurethanes (TPUs) in mind, but can be used for modifying other thermoplastic elastomers as well. For example, the product, which is supplied in pellet form, can markedly boost the properties of thermoplastic polyamide and copolyester elastomers.

GENIOPLAST® Pellet 345 is a silicone copolymer and is processed like a thermoplastic. Organic polymer segments contained within GENIOPLAST® Pellet 345 make it so compatible with thermoplastic polyurethanes that, unlike conventional silicones, it disperses very finely and homogeneously throughout the polyurethane matrix. In so doing, it becomes physically bound to the matrix and is therefore unable to migrate. Adding GENIOPLAST® Pellet 345 boosts the

surface smoothness of thermoplastic polyurethanes, thereby enhancing their scratch and abrasion resistance. Moreover, the surfaces become more resistant to contamination by foodstuffs and cosmetics. In Europe, the product is authorized for food-contact applications as well.

► **3D Printing with Silicone**

At this year's K, WACKER will present its latest innovation in the field of 3D printing with real silicone: the ACEO® Imagine Series K2. With its multiple printing nozzles, the new printer can print up to four different silicone materials simultaneously, allowing entirely novel designs to be realized. 3D objects can now be printed in different colors and with different degrees of hardness. The new technology also benefits the printing of objects, which require support material. For such cases, up to three different materials or colors are available.

Another highlight is ACEO's new auto-control technology. It measures the silicone layer applied with each printing operation and compares it with the target value specified in the CAD model. If the program detects any discrepancies, they are automatically corrected with the next layers. In this way, the new printer produces extremely precise and detailed 3D prints, which are even suitable for difficult industrial applications. Thus, ACEO®'s auto-control technology sets new benchmarks regarding 3D printing with real silicones.

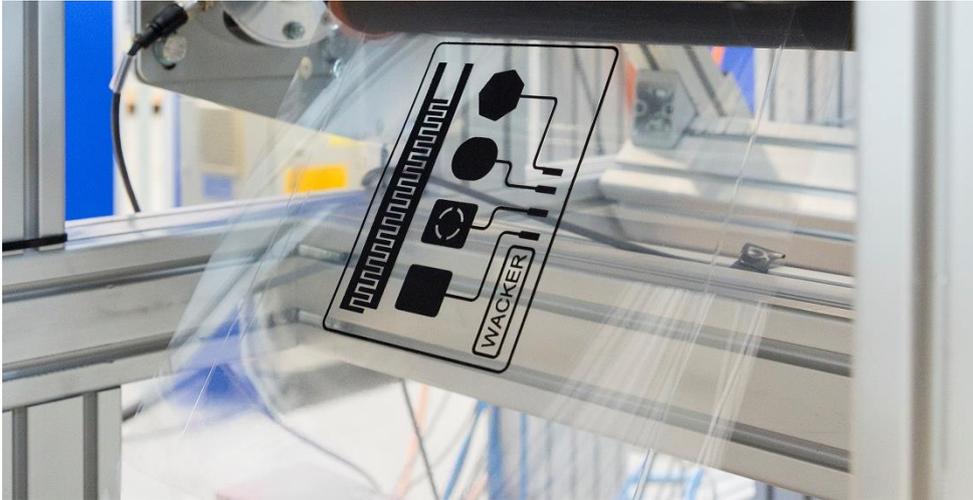
**Visit WACKER at K 2019 in Hall 6 at Booth A10.**



At this year's K 2019, Munich-based chemical company WACKER will showcase ELASTOSIL® LR 5040. Parts made from the liquid silicone rubber possess very good mechanical properties and do not require thermal post-treatment. (Photo: WACKER)



Profile made from flame-retardant solid silicone rubber. At this year's K 2019 tradeshow, WACKER will be showcasing its novel product ELASTOSIL® R771 which was developed to meet the new EU-wide fire-safety standard for rolling stock. (Photo: WACKER)



At the K 2019 Trade Fair for Plastics and Rubber, WACKER will present NEXIPAL® for the first time. NEXIPAL® consists of electroactive silicone laminates. They can generate vibrations and haptic signals in displays that can be recognized without eye contact, just by touch. (Photo: WACKER)



WACKER's new silicone additive GENIOPLAST® Pellet 345 lowers the hardness of thermoplastic polyurethane elastomers, while simultaneously boosting their surface properties. Plastic articles can thus be given a silky-soft surface that is resistant to abrasion and contamination. (Photo: WACKER)

**Note:**

These photos are available for download at:

<http://www.wacker.com/pressreleases>

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**The Company in Brief:**

WACKER is a globally-active chemical company with some 14,500 employees and annual sales of around €4.98 billion (2018).

WACKER has a global network of 24 production sites, 22 technical competence centers and 50 sales offices.

**WACKER SILICONES**

Silicone fluids, emulsions, rubber grades and resins; silanes; pyrogenic silicas; thermoplastic silicone elastomers

**WACKER POLYMERS**

Polyvinyl acetates and vinyl acetate copolymers and terpolymers in the form of dispersible polymer powders, dispersions, solid resins and solutions

**WACKER BIOSOLUTIONS**

Biotech products such as cyclodextrins, cysteine and biologics, as well as fine chemicals and PVAc solid resins

**WACKER POLYSILICON**

Polysilicon for the semiconductor and photovoltaic industries