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PRESS RELEASE

Number 19

WACKER Presents Silicone Resin for High-Temperature Resistant Molded Parts at CWIEME Berlin

Munich, May 22, 2023 – At this year's CWIEME tradeshow for coil winding, insulation and electrical manufacturing, WACKER is presenting a novel material solution to manufacture mechanically durable plastic components that can withstand temperatures of over 200 degrees Celsius for long periods. Thanks to the silicone resin binders SILRES® LR 700 and POWERSIL® Resin 700 and the binder-based silicone molding material POWERSIL® Resin 710, manufacturers can create molded parts via compression molding, pressure gelation or even injection molding technologies. This makes the product suitable for molded parts, which comply to insulation class R and have to withstand temperatures of up to 220°C for extended periods of time. CWIEME takes place from May 23 – 25 in Berlin, Germany.

The new silicone resin binders, which are not subject to labeling requirements under EU directives, offer several advantages and are therefore an alternative to high-temperature-resistant polymers like PTFE (polytetrafluoroethylene) and PEEK (polyether ether ketone). Components produced using these new products are hallmarked by good mechanical strength and UV stability. The silicone materials involved can be processed with roughly the same ease as compounds like epoxide-based or polyurethane-based resins, which are

very commonly used for producing components subject to lower levels of thermal stress.

SILRES® LR 700 and POWERSIL® Resin 700, both solvent-free phenyl methyl silicone resin binders, are transparent, low-viscosity liquids. Both binders require suitable combinations of fillers when processed into molded parts with good mechanical properties. WACKER has therefore developed an optimized formulation called POWERSIL® Resin 710. This means that the company has two alternatives on the market for manufacturing molded parts that are stable at high temperatures: customers who prefer to work with their own fillers and/or filler blends, can use SILRES® LR 700 and POWERSIL® Resin 700 liquid binders; the best pick for users who want to take advantage of ready-to-use solutions, is POWERSIL® Resin 710. The formulation comprises the silicone resin binder and a filler blend consisting of powdered and fibrous fillers.

WACKER's innovations are a response to increasing industry demand for polymers that resist high temperatures. Because technical systems are becoming increasingly more powerful and, at the same time, smaller, they emit more heat per unit area. In electric vehicle motors, for example, losses of five Watts per cubic centimeter are not unusual. Electrically insulating polymer-based components positioned near these kinds of heat sources need to work flawlessly for years and retain their properties in the face of the high temperatures generated.

Further product highlights at CWIEME 2022:

- **SILRES® H60**

The silicone resin SILRES® H60 was specifically developed for the trickle impregnation of electric motors. It cures rapidly into a heat-resistant and electrically insulating thermoset, thereby making it possible to quickly impregnate the coil winding. What is more, electric motors impregnated with this resin exhibit considerable thermal stability and durability. The new silicone resin is ideal for impregnating the motors of smoke extraction fans and electric cars.

- **ELASTOSIL® N 9111**

The tin-free formulated one-component silicone rubber is a versatile adhesive and sealant for applications in the automotive, electrical, and electronics industries. It cures at room temperature in the presence of atmospheric moisture and is characterized by excellent heat resistance and good mechanical properties. The silicone adheres to many substrates such as aluminum, stainless steel, glass, polyamide or polyvinyl butyral and offers continuous thermal stability up to 200 degrees Celsius when cured. ELASTOSIL® N 9111 complies with the UL94 V-0 fire safety standard of the US testing institute Underwriters Laboratories and meets the requirement sets R22, R23 and R24 respectively for the Hazard Levels HL1-3 according to the railway vehicle fire protection standard EN 45545-2. The product is available in black.

Visit WACKER at CWIEME Berlin in Hall 3.2 at Booth 32B34.

WACKER will present its silicone resin binders SILRES® H60 and POWERSIL® Resin 700 as well as the binder-based silicone molding formulation POWERSIL® Resin 710 at CWIEME Berlin. The POWERSIL resins are not subject to labeling requirements under EU directives and are an alternative to high-temperature resistant polymers like PTFE und PEEK. Lab tests show that components manufactured with the help of these binders stand out due to their high mechanical strength and UV stability. (Foto: WACKER)

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The company in brief:
WACKER is a globally active chemical company with some 15,700 employees and annual sales of around €8.21 billion (2022).
WACKER has a global network of 27 production sites, 26 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