

PRESS RELEASE

Number 6

WACKER and INPRO Launch New Silicone Adhesive for Plastic Oil Pans

Munich, January 26, 2010 – WACKER, the Munich-based chemical group, in collaboration with the society for innovation (INPRO), a joint venture of BASF, Daimler, Siemens, ThyssenKrupp, Volkswagen, and the Federal State of Berlin, has developed a new silicone rubber specifically designed to meet tough automotive-industry demands. The RTV-2 liquid silicone rubber can be easily machine applied, cures at room temperature, and has excellent resistance to oil, heat and blow-by gases. With its outstanding adhesive and sealing properties, this rubber grade enables innovative engine construction solutions. For example, plastic oil pans will be assembled inexpensively and durably in the future thanks to this new silicone adhesive.

Thanks to their great versatility, WACKER silicone elastomers find use in almost all industries, from automotive and mechanical engineering through electronics and textiles, to the construction sector. The wealth of possible applications is due to the inorganic backbone that gives silicone elastomers not only greater heat resistance, but also better resistance to weathering, aging and chemicals than organic polymers.

With ELASTOSIL® 76540 A/B, WACKER now offers the automotive industry an innovative silicone adhesive with high resistance to oil,

heat and blow-by gases. This room-temperature-vulcanizing (RTV), two-part silicone, developed jointly with the INPRO in Berlin, is extremely robust. Even when immersed in organic liquids such as engine oil at over 100 °C, the silicone sealant shows hardly any swelling and retains its mechanical strength. Consequently, it bonds extremely reliably and durably to a variety of polymers and metals.

ELASTOSIL® 76540 A/B Enables Innovative Automotive Engineering Solutions

These properties can be exploited to provide new automotive solutions, e.g. in engine construction. Oil pans are one of the very last bulky parts in a car engine to be produced from plastic. Sealing these oil pans with silicone adhesives and reducing the number of screws would save an impressive 25 percent of a pan's costs. What's more, the conventional rubber gaskets can be dispensed with.

Instead, the seal is provided by WACKER's new ELASTOSIL® 76540 A/B silicone adhesive. According to INPRO, this adhesive offers optimum bond strength and leak-tightness when used for the ideal material combination of aluminum and Ultramid® – a polyamide supplied by the BASF chemical group.

As a sealant and adhesive, ELASTOSIL® 76540 A/B can be used wherever there's a need for high heat durability and resistance to organic chemicals. Alongside the bonding of Ultramid® oil pans, other applications are available where metals or metal parts must be flexibly and durably bonded to polymers – for example in transmissions, clutches and cooling circuits. According to INPRO,

aluminum-aluminum bonds remain resistant to coolant for over 1,000 hours at 120 °C.



INPRO performed sealing and bonding tests with WACKER's ELASTOSIL[®] 76540 A/B silicone adhesive on a BASF Ultramid[®] oil pan. Additionally, the combination of Ultramid[®] and ELASTOSIL[®] provides an effective replacement for the gaskets of cylinder head covers and oil separators.

(Photo courtesy of INPRO Innovationsgesellschaft mbH)

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The company in brief:

WACKER is a globally active chemical company with some 15,900 employees and annual sales of around €4.3 billion (2008). WACKER has 27 production sites and over 100 sales offices worldwide.

WACKER SILICONES

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

WACKER POLYMERS

Polyvinyl acetate and vinyl acetate copolymers in the form of dispersible polymer powders, dispersions and solid resins used as binders for construction chemicals, coatings, adhesives, paints, plasters and nonwovens

WACKER FINE CHEMICALS

Fine chemicals, PVAc solid resins, biologics and other biotech products such as cyclodextrins and cysteine

WACKER POLYSILICON

Polysilicon for the semiconductor and photovoltaics industries; solar wafers

Siltronic

Hyperpure silicon wafers and monocrystals for semiconductor devices