



Press Release

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Thermal management, electronic protection and structural bonding materials enable long-lasting performance of smart factory components

Henkel solutions for Industry 4.0 add strength and endurance to factory intelligence

Düsseldorf, Germany – Building a resilient factory of the future requires both digital capability and reliable, rugged hardware. Henkel, a leader in industrial automation material solutions with an expansive product portfolio, today announced the success of several formulations that tackle the challenges of Industry 4.0's (I4.0) evolution.

The operational demands of more complex machine-to-machine communication (M2M) systems, advanced robotics, and factory energy management networks require high-performance thermal control and electronic protection materials. Integrating system-enhancing materials helps reduce manufacturing downtime, lower cost and extend viable hardware life through improved reliability. Among Henkel's proven products are:

- High-performance thermal interface materials (TIMs) to optimize the function of higher power-density devices through efficient heat removal.
- Protective coatings, encapsulants, gaskets and sealants that defend electronic modules against operational stress and environmental influences such as moisture and dust.
- Bonding adhesives that hold components and housings firmly in place during perpetual production cycles.

"The demonstrable quality and efficiency benefits of artificial intelligence (AI) and machine learning within the smart factory are well-documented. I4.0's successful evolution, however, requires innovations that can address the intersecting expectations of form, function, cost, efficiency, and reliability – all while digitized production systems incorporate higher-power devices to support big data and continuous operation," says Henkel Director of Market Strategy for Power and Industrial Automation, Justin Kolbe. "We are partnered with the world's leading

developers of energy generation and power conversion systems, motors and drives, and controllers and sensors that make factories of the future possible.”

Recent examples of tangible results include:

- [Bergquist BOND PLY TBP 1400LMS-HD](#) thermally conductive adhesive was selected for a power supply that requires automated assembly, a thin alternative to mechanical fasteners, and robust heat dissipation. All objectives were achieved with a single material.
- A DC-DC converter leveraged [Bergquist Gap Filler TGF 3500LVO](#) liquid TIM to facilitate automated application, resulting in 20% production cost reduction, 15% output improvement and equivalent thermal management performance to the former material.
- Sonderhoff automated dispensing technology combined with [Fermapor K31](#) formed-in-place-foam gasket (FIPFG) materials enabled a significant quality improvement and 30% cost reduction for sealing of a power distribution system housing.

Kolbe underscores the importance of Henkel’s ingenuity in the I4.0 space, acknowledging the central role of data control and analytics, while highlighting the absolute requirement for high-performing mechanical systems. “Motors, drives, controllers and robotics are the muscle executing on smart factory’s intelligence,” he says. “For true lights-out automation to transpire, bits and bytes must be supported by dependable, high-performance brawn. That’s what Henkel materials deliver.”

[Learn more](#) by visiting Henkel’s online resources.

[Watch a video](#) – Trends driving Industrial Automation

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 2021, Henkel reported sales of more than 20 billion euros. The company employs about 53,000 people globally – a passionate and highly diverse team, united by a strong company culture, a common purpose, 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.

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SOLUTIONS FOR SMART FACTORY COMPONENTS



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