



Press Release

May 9, 2019

New EMI Shielding, Non-conductive Pastes and Films, and High-thermal Semi-sintering Die Attach Solutions Ideal for Heterogeneous Integration

5G- and Automotive ADAS-enabling Henkel Materials Featured at ECTC 2019

Irvine, California – The drive to develop electronic materials capable of handling the reliability and performance demands of emerging integrated packages for 5G wireless communication and ADAS automotive systems has resulted in next-generation formulations that leapfrog conventional products. Henkel is at the forefront of this development and, from booth 516 at the [Electronic Components and Technology Conference](#) (ECTC), Henkel advanced packaging experts will showcase novel electronic materials designed for various device configurations including fan-in and fan-out wafer-level packages (WLPs), 2.5 and 3D thru-silicon via (TSV) architectures, flip chips and SiPs.

Among the featured Henkel 5G and ADAS device solutions are:

- **Conformal and compartment EMI shielding** – Greater integration, miniaturization and the coexistence of chips with higher and lower frequencies within the same package have driven the development of Henkel's package-level EMI shielding solutions. Ultra-thin, on-package conformal shielding material LOCTITE® ABLESTIK® EMI 8880S allows a 5 µm-thin layer of conductive material to be sprayed onto the package exterior to protect against RF interference for typical frequency ranges between 450 MHz and 10 GHz. For integrated packages such as SiPs, LOCTITE ABLESTIK EMI 3620FA isolates chips within the same device. A narrow trench is cut between the target components and then filled via automated dispensing with the Henkel material to provide effective in-package isolation. The conformal and compartment shielding materials are compatible with each other and may be used as a system or as stand-alone solutions.
- **Semi-sintering die attach pastes** – The LOCTITE ABLESTIK 8068Tx series are high-thermal semi-sintering die attach pastes that provide a viable alternative to solder for today's smaller, higher-power die. The materials

LOCTITE TECHNOMELT BONDERITE

Schwarzkopf

Dial

RIGHT
GUARD

Snuggle Persil

all

Purex

deliver void-free bondlines for excellent reliability and thermal performance with bulk thermal conductivity up to 110 W/m-K.

- **Non-conductive pastes and films** – Streamlining the flip-chip protection process, Henkel's non-conductive paste (NCP) and non-conductive film (NCF) portfolios provide a higher-throughput and more effective alternative to conventional C4 techniques. LOCTITE ECCOBOND® NCP 5209 is well-suited for copper pillar flip-chip architectures, while the LOCTITE ECCOBOND NCF 200 series films offer excellent protection for memory chips and 3D TSV stacked designs. Both NCP and NCF deliver next-generation advanced packaging capability, allowing for tighter control of keep-out-zones; enable fine-pitch, narrow gap interconnects; and ensure bump protection during thermocompression bonding.
- **WLP encapsulants** – As wafers become thinner to accommodate new package profiles, handling and warpage control is increasingly more challenging. Henkel is developing new low modulus liquid compression molding and encapsulating materials to enable fan-in and fan-out WLPs and WLCSPs to be processed with minimal warpage for high-reliability. The company's LCM materials, which are dispensed onto the wafer and then compression molded, are designed for use with fan-in and fan-out packages commonly found in mobile applications. For operations where stencil printing is the preferred deposition method, Henkel's printable encapsulant is suitable for fan-in structures incorporated into devices for telecommunication and 5G applications.

Conference attendees interested in learning more about EMI shielding solutions for thinner, high-frequency packages should attend Henkel's presentation on the subject, scheduled as part of the 'Advanced Materials for High Speed Electronics' session. Xuan Hong, Henkel Scientific Principal, will present her "Highly Conductive Compartment EMI Shielding Material with Jet-dispensing Technology" paper on May 30th at 11:15 a.m. To register, visit <https://ectc.net/registration/index.cfm>.

Continuing to lead the market in advanced packaging materials development, Henkel is enabling the future of mobile communication and automotive safety and control. Meet the technical team at ECTC booth 516 to discuss specific applications and learn more about Henkel solutions, or visit www.henkel-adhesives.com/electronics.

About Henkel in North America

In North America, Henkel operates across its three business units: Adhesive Technologies, Beauty Care, and Laundry & Home Care. Its portfolio of well-known consumer and industrial brands includes Schwarzkopf® hair care, Dial® soaps, Right Guard® antiperspirants, Persil®, Purex® and all® laundry detergents, Snuggle® fabric softeners, as well as Loctite®, Technomelt® and Bonderite® adhesives. With sales of around 6 billion US dollars (5 billion euros) in 2018, North America accounts for 25 percent of the company's global sales. Henkel employs approximately 9,000 people across the U.S., Canada and Puerto Rico. For more information, please visit www.henkel-northamerica.com.

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 2018, Henkel reported sales of around 20 billion euros and adjusted operating profit of around 3.5 billion euros. Henkel employs around 53,000 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.

Photo material is available at www.henkel-northamerica.com/press

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