



## Press Release

April 15, 2019

New one-part cure-in-place TIMs, low-volatility liquid gap fillers and presentations from thought leaders showcase company's power application expertise

### Henkel to launch novel thermal and solder material solutions at PCIM Europe 2019

Düsseldorf, Germany – At the PCIM Europe event taking place May 7-9 in Nuremberg, Henkel will launch new liquid-dispensed, low-outgassing and one-part thermal interface materials (TIMs) designed for high-power industrial automation, automotive power conversion and automotive advanced driver-assistance systems (ADAS) applications. Also making its European debut is Henkel's novel temperature stable Loctite GC 18 low-voiding solder paste formulated to minimize voids and increase reliability across a wide component range. As part of the Exhibitor Forum and conference program, in-depth discussions of application criteria and material specifics will be offered through a series of papers and presentations by Henkel technical specialists.

#### Thermal Management and Low-voiding Interconnect Materials

One-part, cure-in-place TIMs – Henkel has developed two new, one-part, cure-in-place thermal management materials to address the requirements for simplified processing and eliminate the concerns around dispensing speed with pre-cured, one-part gels. The first, a Bergquist Liqui Form material, has a thermal conductivity of 3.5 W/m-K and, once dispensed, cures at room temperature. This material is ideal for applications that require fast and easy processing, low assembly stress and a robust final cured modulus for lifetime gap stability. With a thermal conductivity of 4.5 W/m-K, the second one-part TIM is a silicone-free Bergquist Gap Filler moisture-cure material designed for applications where silicone is a concern (for example, optical systems in ADAS, industrial automation drives, and PLCs) and high-temperature stability of up to 150°C is required.

Low-volatility liquid gap fillers – Delivering robust thermal conductivity and the mechanical property benefits of silicone, Henkel's Bergquist Gap Filler TGF 1500LVO and Bergquist Gap Filler TGF 3500LVO cure-in-place TIMs are low-volatility formulations designed to ensure outgassing is minimized. The two-part materials, with 1.8 W/m-K and 3.5 W/m-K thermal conductivity, respectively, are well-suited for high-throughput operations where automated application is beneficial. As liquid

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mediums, the materials are conducive to miniaturized, intricate designs and can flow in and around tight spaces to ensure excellent gap filling at the interface for optimal heat dissipation.

Low-voiding, temperature stable solder paste and high reliability alloy -- Adding to its line of award-winning Loctite GC temperature stable solder pastes, Henkel has developed a low-voiding formulation compatible with multiple component sizes including large, thermally-challenged devices such as MOSFETs and QFNs, which are often integrated into power and automotive control applications. Like all Loctite GC materials, Loctite GC 18 offers stability in transit, in storage, and on the production line for the lowest cost-of-ownership and excellent performance and reliability across a wide spectrum of product builds. In addition, the company's high reliability 90iSC lead-free solder alloy will be on show. Designed in cooperation with automotive manufacturers, Henkel's 90iSC has been formulated to withstand the demands of harsh environments, delivering high operating temperature stability beyond that of conventional SAC alloys.

### **Learn from Henkel Subject Matter Experts**

Henkel's team of technical specialists will expand on the benefits of the above materials in a series of three presentations taking place throughout the three-day PCIM Europe event.

- **Silicone vs. Silicone-free Thermally-conductive Materials** by Henkel Technical Customer Service Engineer, Giuseppe Caramella, on May 7 at 11:40 in the Exhibitor Forum: This presentation discusses the benefits of each chemistry platform, operating conditions, restrictions, and outgassing requirements.
- **Next-generation, One-component Cure-in-place Thermally-conductive Gap Filler** on May 8 at 4:20 p.m. in the Exhibitor Forum is presented by Stephan Höfer, Henkel EIMEA Business Development Manager for Powertrain and Power Conversion. The presentation will cover the difference of pre-cured gels and the value proposition for using a one-component, cure-in-place, vertically-stable Liqui Form material.
- **The Influence of Solder Paste Formulation and Process Factors on Large QFN Material Voiding** by Rodrigo Aguilar, Henkel Business Development Manager, will cover information on the current voiding standards and discuss solder material and process factors that influence voiding. The presentation, taking place on May 7<sup>th</sup> at 15:15, will be part of the poster sessions at the Foyer Ground NCC Mitte.

To learn more about Henkel's latest innovations, visit the team in PCIM Europe booth 7500. Additional details regarding Henkel's full scope of materials for industrial automation and automotive applications can be found here:

[www.henkel-adhesives.com/electronics](http://www.henkel-adhesives.com/electronics).

## 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](http://www.henkel.com).

Photo material is available at <http://www.henkel.com/press>.

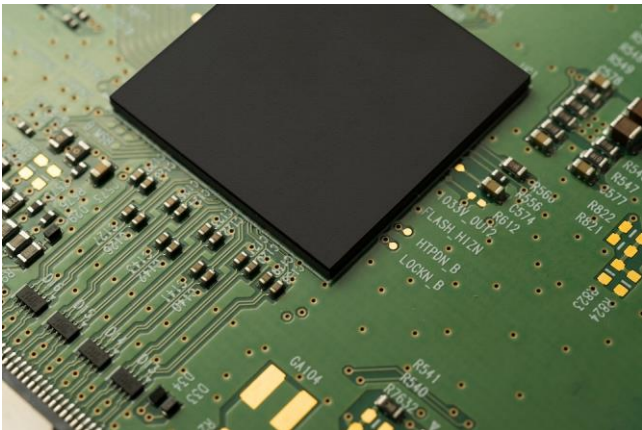
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Figure 1:



Thermal Management Solutions – high performance, thermally conductive liquid gap fillers, ensure excellent gap filling at the interface for optimal heat dissipation.

Figure 2:



Solder Material Solutions – enabling excellent performance and reliability across a wide spectrum of product builds.