



Press Release

January 16, 2020

Thermal Management, Low Voiding Solder and High Thermal Interconnect Materials
Featured at Annual Electronics Conference

Henkel Tackles Challenging 5G, Power, Automotive and Aerospace Applications at IPC APEX EXPO 2020

Irvine, California – At next month's IPC APEX EXPO electronics event in San Diego, CA, Henkel's exhibit and conference participation will highlight the materials leader's latest innovations and the scope of its portfolio, which offers 'solutions across the board' for multiple applications. Henkel's aggressive product development initiatives have resulted in advanced thermal management materials for next-generation 5G infrastructure systems, semi-sintering materials that address demanding aerospace reliability requirements, and low voiding solder pastes that help ensure electrical and mechanical reliability for power electronics.

Visitors to IPC APEX EXPO are invited to meet with Henkel technologists in booth # 3603 to learn more about:

High Performance Materials for Tough Operational Environments

- **High Thermal Conductivity, Ultra-Low Modulus TIM** -- Controlling the heat generated by 5G telecom infrastructure and consumer mobility devices while minimizing assembly stress is becoming more difficult as power densities rise within increasingly smaller footprints. Soft, compliant, ultra-low modulus BERGQUIST® GAP PAD® TGP 10000ULM thermal interface material (TIM) strikes this balance, with a thermal conductivity of 10.0 W/m-K, which is among the highest lambda values available on the market today for low modulus TIM pads.
- **Low Voiding Solder Paste** – The need to minimize internal temperature in order to extend component lifetime is driving the requirement for low voiding solder materials. Eliminating hot spot formation presumed to be caused by voids in the interconnect material helps improve electrical and mechanical reliability, which is critically important for power and industrial automation applications which are often operational 24/7. LOCTITE GC 18 is the latest

LOCTITE TECHNOMELT BONDERITE

Schwarzkopf

Dial

RIGHT
GUARD

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all

Purex

addition to the award-winning LOCTITE GC materials portfolio with market-leading performance of less than 25% voiding on large QFNs (>8.0 mm x 8.0 mm) and <10% on small QFNs (< 8.0 mm x 8.0 mm).

- **Semi-sintering Materials** -- Aerospace applications, most notably radar systems, require board-level assemblies and power semiconductors to cope with high current densities and effective heat dissipation. Simultaneously, performance chips that integrate Gallium Nitride (GaN), Gallium Arsenide (GaAs) and Silicon Carbide (SiC) have higher operating temperatures (>200°C) which soft solder and silver-based adhesives cannot survive. LOCTITE® ABLESTIK® ICP 9000 series semi-sintering interconnect materials offer exceptional thermal performance to cope with the demands of high-power density aerospace applications.

Technology Expertise

For conference attendees that want to dive deeper into materials capabilities and practical application, presentations from several Henkel technologists offer additional educational opportunities. The following paper and poster presentations will be delivered throughout the three-day event:

- Course: Thermal Management Using Thermal Interface Materials, Dr. Rita Mohanty, Henkel Director of Application Engineering and Technical Customer Service, Feb. 3, 9:00 am – 12:00 pm.
- Paper Presentation: A Hybrid Sintering Technology for High-power Density Devices Used in Aerospace Applications, Yuan (David) Zhao, Henkel Principal Engineer, Technical Customer Service, Feb. 5, 1:30 pm – 3:00 pm.
- Paper Presentation: Liquid Dispensed Thermal Materials for High-Volume Manufacturing, Sanjay Mirsa, Henkel Senior Scientific Principal, Feb. 6, 9:00 am – 10:00 am.
- Poster Sessions will take place on Feb. 4 from 10:00 am – 10:30 am and Feb. 5 from 4:30 pm to 5:00 pm in the Ballroom 20 Foyer. Henkel's Dr. Mark Currie and Neil Poole will present the below:
 - Compatibility Secures Reliability – Understand how solder flux compatibility (or lack thereof) with underfills, encapsulants, conformal coatings and other board-level materials can impact reliability.
 - Solder Solutions for Harsh Environments – Conventional SAC alloys do not meet the stringent reliability standards for many systems that operate within harsh environments, such as automotive. Learn about a lead-free alloy designed to cope with tough conditions.

To discover more about these materials or any of Henkel's 'solutions across the board', connect with a Henkel technology specialist in booth #3603 during IPC APEX EXPO 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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