PRESS RELEASE

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NEW UNDERFILL STRUCTALIT® 8205
FOR ADVANCED ELECTRONICS

Hoenle Adhesives announces the launch of its next-generation underfill material, Structalit® 8205, engineered to deliver exceptional mechanical stability, thermal performance, and long-term reliability in modern electronic assemblies. This advanced board-level underfill meets the growing demands of miniaturized and high-density electronic designs across multiple industries.

As electronic devices continue to evolve toward higher functionality, smaller form factors, and increased power density, ensuring the reliability of solder joints and sensitive components has become a critical challenge. Underfills play a key role in addressing these challenges by redistributing mechanical stress, enhancing thermal stability, and protecting assemblies from environmental influences. Structalit® 8205 has been specifically developed to meet these requirements in next-generation applications such as flip chips, BGAs, and other advanced packaging technologies.

Optimized Formulation for Maximum Reliability

Structalit® 8205 is based on a refined epoxy formulation with finely tuned filler technology. These fillers reduce the coefficient of thermal expansion (CTE), enabling better compatibility between different materials within electronic assemblies. This results in reduced stress on solder joints during temperature fluctuations, ultimately increasing product lifespan and reliability.

In addition to its low CTE, Structalit® 8205 offers a high glass transition temperature (Tg) and a balanced modulus, ensuring both rigidity and flexibility where needed. This combination is particularly important in applications exposed to frequent thermal cycling or mechanical stress.

Superior Flow Performance and Process Efficiency

A standout feature of Structalit® 8205 is its excellent capillary flow behavior. The material demonstrates fast and reliable flow characteristics at elevated dispensing temperatures between 80°C and 100°C, allowing it to penetrate even very narrow gaps and complex geometries. This ensures complete and void-free coverage beneath components — an essential factor for long-term reliability. The controlled flow properties also enable precise management of the keep-out zone, maintaining dimensions below 300 µm after dispensing. This level of control is especially beneficial for densely packed circuit boards and miniaturized designs.

Structalit® 8205 can easily be jetted with all common jetting equipment with flat nozzles. During the dispensing process, Structalit® 8205 performs very fast flowing at high temperatures (between 60 and 90°C). It is easy to control the keep-out zone below 300 µm of Structalit® 8205 after dispensing.

Furthermore, Structalit® 8205 supports rapid thermal curing, which contributes to increased throughput (UPH) and improved energy efficiency in production processes. Manufacturers benefit from shorter cycle times without compromising on quality or performance.

Proven Performance Under Extreme Conditions

Extensive testing has demonstrated the outstanding durability of Structalit® 8205 under demanding conditions. Once cured, the underfill provides excellent mechanical protection for solder joints, even after multiple reflow processes. The material has successfully passed 1,000 thermal cycles between -40°C and +100°C, confirming its robustness in typical operating environments.

In more extreme scenarios, Structalit® 8205 has shown remarkable resistance to thermal stress, with no cracking observed after more than 100 cycles between -65°C and +150°C. These results highlight its suitability for applications exposed to harsh environmental conditions, including automotive, aerospace, and industrial systems.

Broad Range of Applications

Structalit® 8205 is designed to enhance solder joint reliability in CSP and BGA packages across a wide variety of industries:

- ✓ Consumer Electronics: Smartphones, tablets, wearables, and laptops, including critical components such as CPUs, GPUs, PMICs, and camera modules
- ✓ Automotive Electronics: ADAS systems, infotainment units, power electronics, and control modules exposed to vibration and thermal cycling
- ✓ Industrial Applications: Robotics, automation systems, and industrial control units operating in demanding environments
- ✓ High-Performance Computing (HPC): Servers, data centers, AI accelerators, and high-bandwidth memory (HBM) systems
- ✓ Medical Devices: Implantable and portable electronics requiring long-term operational reliability
- ✓ Aerospace & Defense: Avionics, radar, and communication systems subject to extreme shock and temperature variations

Beyond mechanical and thermal protection, Structalit® 8205 also provides a barrier against moisture, dust, and aggressive chemicals, ensuring comprehensive protection for sensitive electronic assemblies immediately after curing.

Positive Market Feedback

Initial evaluations with customers in the electronics industry have yielded highly positive results. The combination of fast processing, excellent flow behavior, and outstanding reliability has positioned Structalit® 8205 as a strong solution for next-generation electronic manufacturing.

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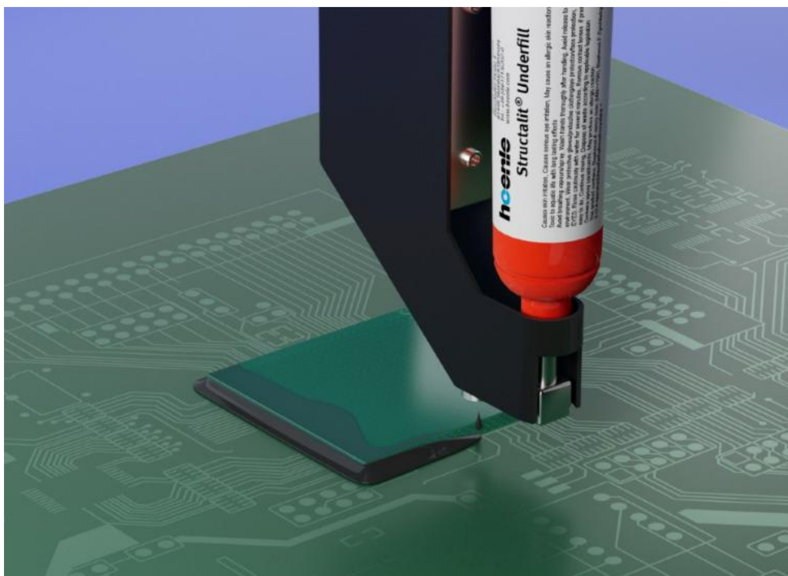
ABOUT HOENLE ADHESIVES:

Hoenle Adhesives (formerly Panacol) is part of the Hoenle Group's Adhesive Systems business unit and is an internationally active manufacturer in the growing market for industrial adhesives. The company offers a broad portfolio ranging from UV-curing adhesives to structural and conductive systems. Together with its parent company, Hoenle AG—a global leader in industrial UV technology—Hoenle Adhesives provides complete solutions from bonding to curing, delivering high-quality and reliable systems to customers worldwide.



Caption:

Structalit® 8205 is dispensed on a PCB board to protect an electronic component

Photo: Hoenle

Note: The photographic material may only be published in connection with the associated press release.