

## Press release

Hanau / Pasadena, October 8, 2018

### **Strong adhesion without hazardous substances**

**Heraeus Electronics has developed a new thick film gold conductor paste that avoids lead and cadmium. Specially matched ingredients also ensure a denser fired film and excellent bond strength with the ability for etching**

The new thick film gold conductor paste from Heraeus Electronics can be used for high-reliability applications such as medical devices as well as high-frequency circuits for communications. Those applications require high performance at high and low temperatures, in chemically aggressive environments, or extremely humid conditions. The paste performs well on dielectrics and on oxide substrate compositions even when multiple firing steps are required.

For the paste specially matched ingredients are used. First, the specific gold powder ensures a higher and tighter bond distribution. Second, a new vehicle formation that ensures maximum densification. Third, a special material combination achieves an excellent bond strength when etched on aluminum oxide. Regulations in the electronics industry have called for the elimination of hazardous substances in thick film pastes for quite some time, but exemptions are in place for critical applications. These exemptions are expected to expire in the next few years.

“Demands for dense, defect-free, etchable gold films that deliver equivalent or improved performance to their lead containing counterparts have been increasing dramatically” says Dean Buzby, Global Product Manager Thick Film at Heraeus Electronics. The developments will be presented at the 51th International Symposium on Microelectronics on IMAPS 2018 in Pasadena. “Continuing trends towards circuit miniaturization and higher packaging density result in greater complexity. Therefore, the thick film gold properties become increasingly critical.”

The new thick film paste from Heraeus Electronics can screen print and resolve fine features down to 100 micron-size lines and spaces. The paste also has the ability to be etched using methods like photolithography processes. This results in even higher density circuit designs down to 25-50 micron-size lines and spaces. Wirebond adhesion of both thin gold and aluminum wire is excellent when fired directly onto ceramic as well as on dielectrics.

---

A globally leading technology group, Heraeus is headquartered in Hanau, Germany. Founded in 1851, it is a family-owned portfolio company which traces its roots back to a pharmacy opened by the family in 1660. Today, Heraeus combines businesses in the environmental, energy, electronics, health, mobility and industrial applications sectors.

In the 2017 financial year, Heraeus generated revenues of €21.8 billion. With approximately 13.000 employees in 40 countries, the FORTUNE Global 500-listed company holds a leading position in its global markets. Heraeus is one of the top 10 family-owned companies in Germany.

With technical expertise, a commitment to excellence, a focus on innovation and entrepreneurial leadership, we are constantly striving to improve our performance. We create high-quality solutions for our clients and strengthen their long-term competitiveness by combining unique material expertise with leadership in technology.

---

Media Contact: Markus Bulgrin  
Communications & Marketing  
Heraeus Holding GmbH  
Heraeusstraße 12 - 14  
63450 Hanau

Phone + 49 (0) 6181 / 35 – 4725  
E-Mail [markus.bulgrin@heraeus.com](mailto:markus.bulgrin@heraeus.com)  
Web <http://www.heraeus.com>