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## **PRESS RELEASE**

### **MACDERMID ALPHA ANNOUNCES THE RELEASE OF MICROFAB® TS-650: TIN SILVER BUMP METALLIZATION FOR WLP**

(Waterbury, CT USA) – February 7, 2019 – MacDermid Alpha Electronics Solutions, announces the release of the MICROFAB® TS-650 process, a high speed tin silver bump metallization for bump, pillar and capping in wafer level packaging. The TS-650 provides a highly smooth and uniform deposit for coplanarity at the package to substrate interface. The lead-free tin-silver top layer applied by the process provides excellent morphology before and after the assembly reflow. Customers combining the TS-650 with MacDermid Alpha's market leading copper pillar for FO-WLP technologies will achieve better process consistency and higher production speeds.

Eric Gongora, Director of Strategic Marketing for Semiconductor Solutions, noted, "We are excited to add TS-650 to our MICROFAB® family of chemistries. This allows our customers to plate their copper pillar stack with an optimally matched copper, nickel, and tin-silver plating scheme. No supplier offers the comprehensive portfolio of industry leading chemistries, innovative manufacturing processes and collaborative chemistry development – from front end to back end in the electronics supply chain."

About MacDermid Alpha Electronics Solutions:

Through the innovation of specialty chemicals and materials under our Alpha, Compugraphics, and MacDermid Enthone brands, MacDermid Alpha Electronics Solutions provides solutions that power electronics interconnection. We serve all global regions and every step of device manufacturing within each segment of the electronics supply chain. The experts in our Semiconductor Solutions, Circuitry Solutions, and Assembly Solutions divisions collaborate in design, implementation, and technical service to ensure success for our partner clients. Our solutions enable our customers' manufacture of extraordinary electronic devices at high productivity and reduced cycle time. Find more at [MacDermidAlpha.com](http://MacDermidAlpha.com).

For more information on MICROFAB® TS-650 contact:  
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