

MICROFAB® TS-650 NXG

Tin-Silver Bump Metallization for Wafer Level Packaging

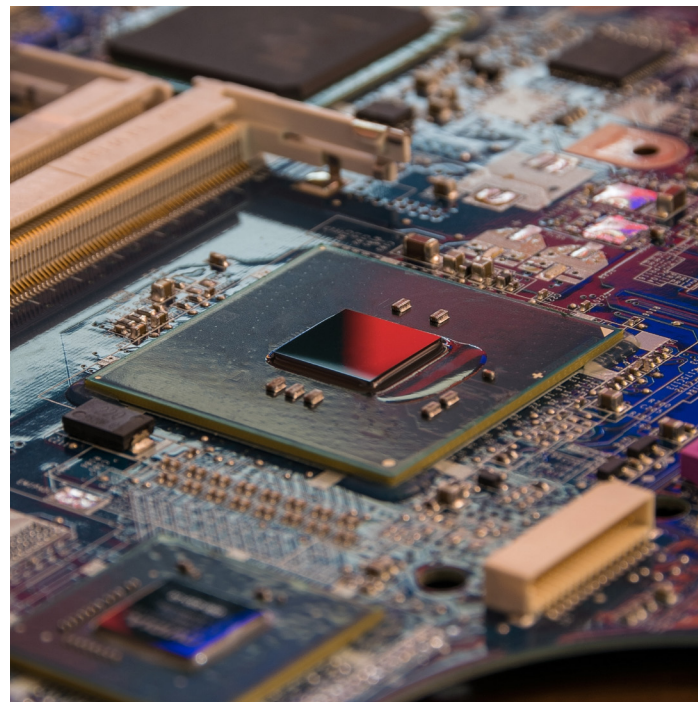
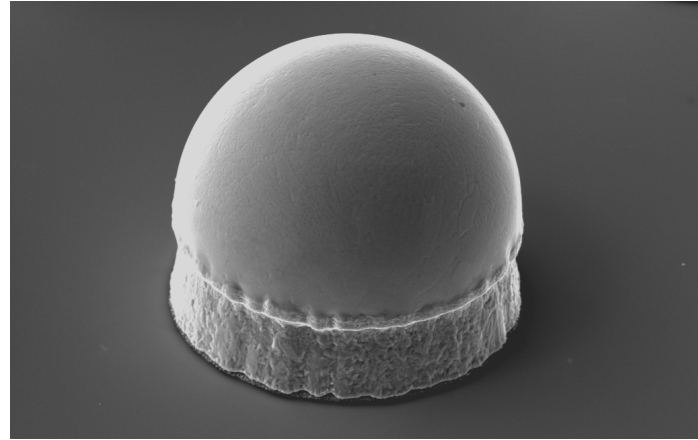
Pre Reflow Uniformity, Wide Process Window Tin-Silver Capping

In wafer bumping, next generation tin-silver alloys are providing the benefits of pure tin without the drawbacks. MacDermid Alpha's **MICROFAB TS-650 NXG** is the tin-silver bump, pillar and capping metallization process for your wafer level packaging designs when coplanarity, bond strength, and optimized process throughput are your goals. The tunable tin-silver alloy produced by MICROFAB TS-650 NXG removes the propensity for whiskering while providing a lower melting point for reflow and a higher resistance to mechanical stress. Developed to perform alongside the MacDermid Alpha industry-leading copper pillar plating technologies, MICROFAB TS-650 NXG is the coating of choice for excellent solderability of chip or package to substrate.

Integration of MICROFAB TS-650 NXG with MacDermid Alpha's leading wafer level packaging processes provides unique options to fabricators in FO-WLP and other advanced design paradigms.

KEY FEATURES

- Smooth and uniform deposit
- Adjustable silver composition
- Foam-free and stable electrolyte
- Horizontal or vertical equipment
- High deposition rate, lead-free process
- For bumping and capping applications
- Excellent post reflow WID bump uniformity



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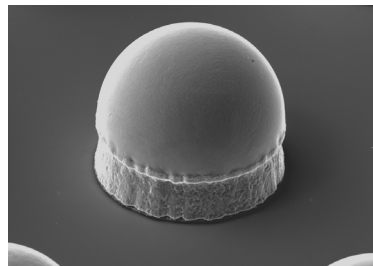
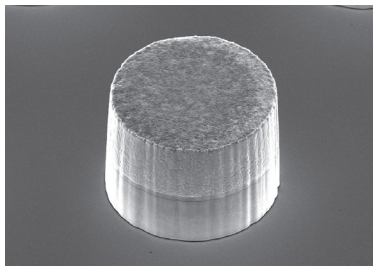
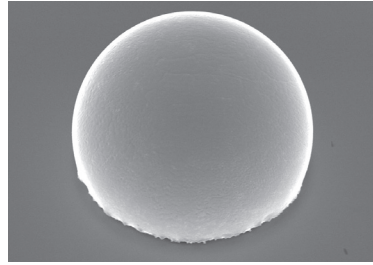
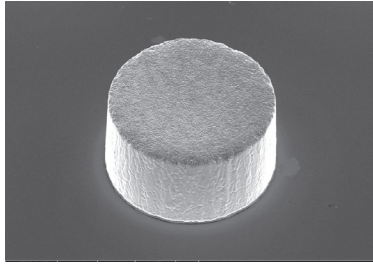


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Excellent Morphology Before and After Reflow

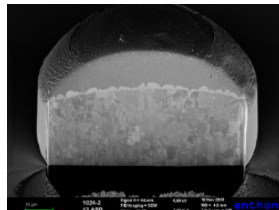
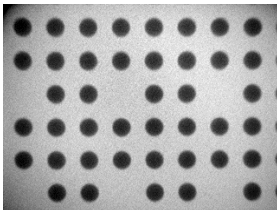
In the fast-changing world of wafer level packaging, having the flexibility to meet new and complex requirements is becoming more important than ever. **MICROFAB TS-650 NXG** provides a highly dependable performance making it suitable for a wide range of applications. With high speed plating capability of up to 12 ASD, the process is able to provide a smooth and regular coating of highly solderable tin-silver on a multitude of fine-pitch packaging designs.



Before Reflow

After Reflow

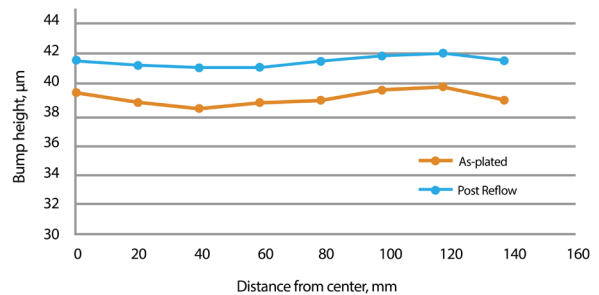
High Speed, Consistent and Void Free



(Left) The MICROFAB TS-650 NXG process provides consistent void free assembly through 100AH/L bath life.

(Right) FIB cross-section of MICROFAB TS-650 NXG post reflow capping at 12 ASD.

Bump Height Distribution



Highly reproducible bump height distribution ensures consistent Within Die and Within Wafer uniformity before and after reflow.

