

Spherolyte® SN 2/3

Highly uniform Sn plating



Electronics

Semiconductor

atotech.com

Highly uniform, pure tin deposits for solder depot plating

Sn electrolyte for solder bump & pillar applications

Spherolyte® SN 2 and Spherolyte® SN 3 are the electrolytes of choice to deposit pure Sn solder bumps that fulfill the high reliability requirements of next generation advanced packaging applications. The single additive system of Spherolyte® SN 3 allows a very simple process control, while Spherolyte® SN 2 allows the fine tuning of process parameters via individual adjustment of the different additives.



Figure 1: Sn solder deposits before reflow

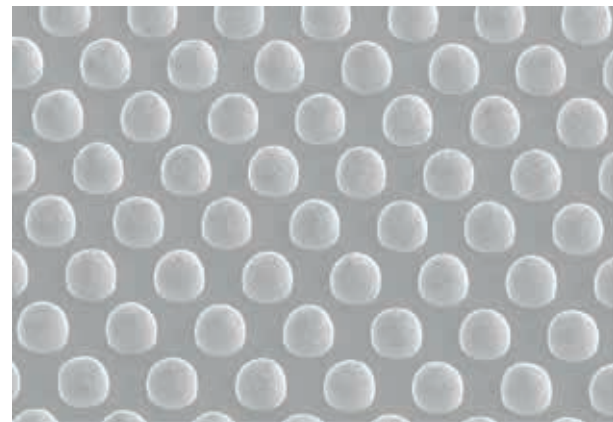


Figure 2: Sn solder deposits after reflow

Features and benefits

- Pure tin deposits
- No voiding at high current densities
- Additive system which is easy to analyse
- Possible to operate at RT
- Applicable for high current densities / deposition speed up to 4 $\mu\text{m}/\text{min}$
- Good solderability / reflow performance

Electrolyte for highly uniform, pure Sn deposition

The process is optimized for new design requirements which demand high CoP uniformities. The robustness of the process allows long bath lifetimes and high-speed plating while ensuring highest purity and void-free results.

Spherolyte[®] SN 2/3 – Long bath lifetimes and cost savings

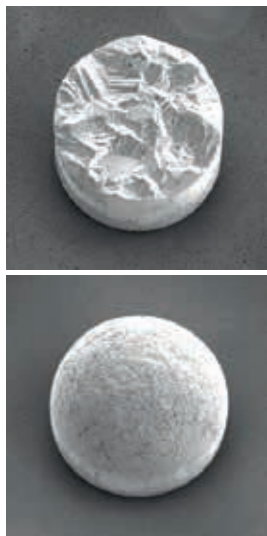


Figure 1-2:
Microscope pictures of Sn
deposit 1) before reflow from
side and 2) after reflow.

Stable additive composition without major degradation

Spherolyte[®] SN is a robust process for solder bump and pillar capping applications for advanced packaging. The stable additive suite is barely consumed or degraded during the plating process, which leads to long bath lifetimes and hence significant cost advantages.

Outstanding high current density performance and excellent voiding properties

The process allows a stable and precise deposition with excellent uniformities even at high current densities of 25 ASD, thus allowing fast Sn deposition. The high purity of the deposited material results in excellent voiding performance after reflow and high reliability and yield.

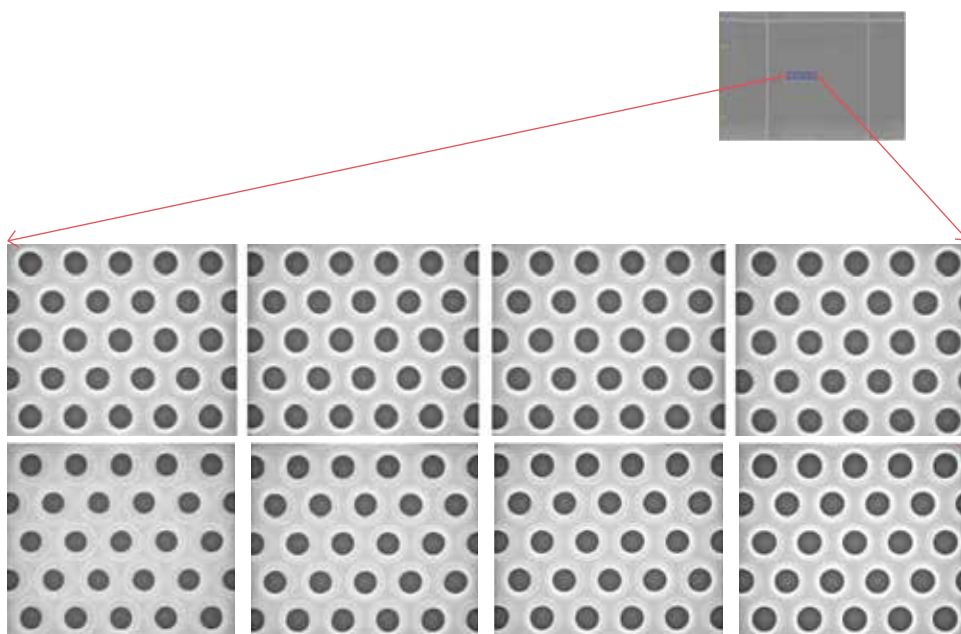


Figure 4: X-ray inspection after reflow shows void-free deposits.

