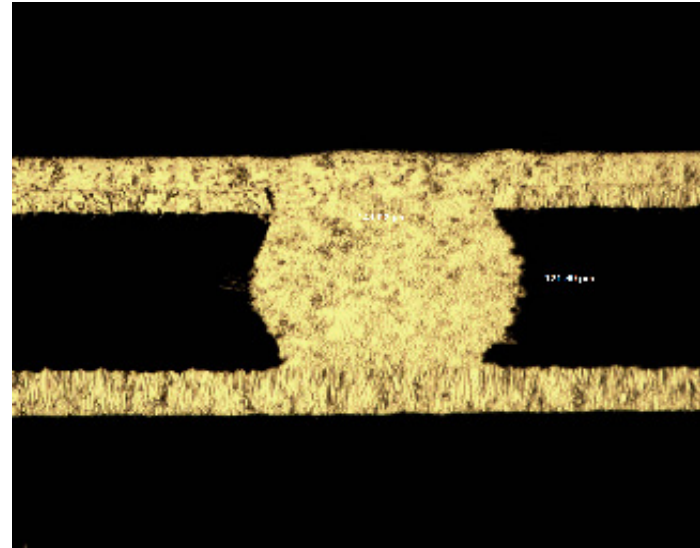


MacuSpec™ VF-TH 500

Simultaneous Via Filling and Through Hole Plating Copper Metallization

High Performance Electroplating for Next-Generation HDI

MacuSpec VF-TH 500 is the latest innovation in the award-winning VF-TH series of simultaneous via fill and through hole plating processes. Trusted by fabricators and OEMs worldwide, the process enables complete filling of microvias across the widest range of diameters, depths, and aspect ratios. Surface copper thickness is minimized while maximizing through hole throwing power, allowing fabricators to meet advanced modified semi-additive process (mSAP) designs and ensuring reliability.



MacuSpec VF-TH 500 is designed to fill large microvias to a flat surface.

KEY FEATURES

- Panel, pattern, and button plate capability.
- Low copper surface build, ensuring fine line capability.
- Efficient, flat filling of microvias up to 200µm in diameter.
- Uniform grain structure across all processing conditions, ensuring structural, thermal and electrical reliability.

Fabricators can benefit from simple process control with consistent performance across the long life of the chemistry. MacuSpec VF-TH 500 is also compatible with direct metallization technologies.



MacDermid Alpha
ELECTRONICS SOLUTIONS

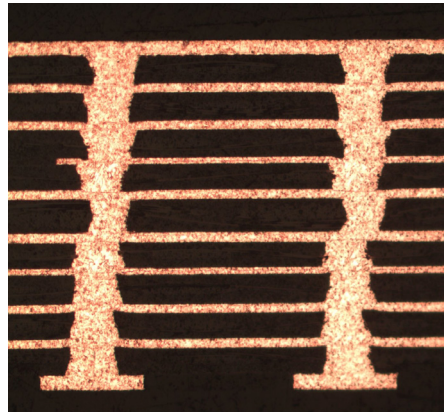


MacuSpec™ VF-TH 500

Simultaneous Via Filling and Through Hole Plating Copper Metallization

Enabling Advanced Interconnect Technologies

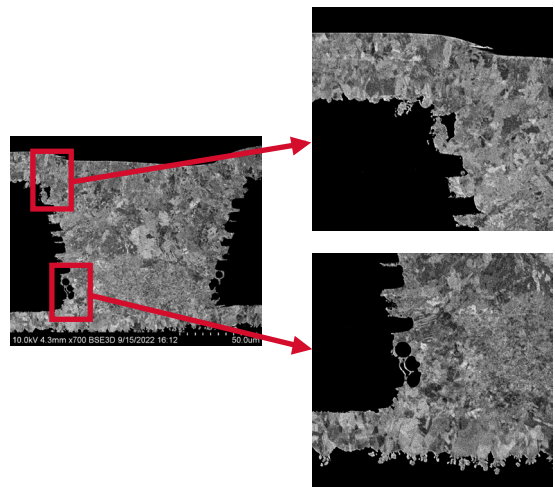
Increasing data-processing rates in high-performance computing, automotive systems and networking infrastructure are driving the demand for reliable, high-density printed circuit board designs. Advanced process techniques such as mSAP are deployed for creating these HDI boards with complex features such as stacked microvias. MacuSpec VF-TH 500 fills large and small microvias to a flat surface, enabling the most complex, high-density designs.



MacuSpec VF-TH 500 enables more complex board designs in applications such as mSAP, high reliability automotive, and high performance computing.

Achieve Excellent Reliability Performance

- Compatible with direct metallization or electroless copper for reliable microvias.
- Reliability test results:
 - ✓ >45,000 psi Tensile Strength, >20% Elongation
 - ✓ 10x Solder Shock
 - ✓ 500x IST cycles @ 150 °C
 - ✓ 1000x TCT cycles @ 150 °C
 - ✓ 500x CITC cycles
 - ✓ OM Test



Compatible with direct metallization or electroless copper for excellent grain structure formation across interfaces.

