

# umicore

# Thru-cup<sup>®</sup> EVF-N



### Additives for Acid Copper via Filling

Thru-cup® EVF-N is a new additive system for electrolytic acid copper plating on PCB. It is used in panel and pattern plating technology for blind via filling and simultaneous through-hole plating. The blind via hole filling characteristics for holes with diameters less than 150  $\mu$ m are excellent. Thru-cup EVF-N works with three additives which can be easily controlled by CVS. Via filling performance is not influenced by electrolyte ageing. The plated copper film has an excellent thickness distribution.

### **Application Features**

- Thermal management enhancement
- Higher interconnect density in HDI PCB
- Long term reliability of the assembly and packaging operation

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### Advantages

- Excellent blind via hole filling characteristics
- Suitable for panel and pattern plating with simultaneous through-hole plating
- Long electrolyte lifetime
- Excellent thickness distribution of the plated copper film
- Concentrations of all additives can be analysed by cyclic voltammetry (CVS)

### Applications

- IT products
- Consumer electronics
- Automotive applications

## Thru-cup® EVF-N **COPPER VIA FILLING ELECTROLYTE**

## **TECHNICAL SPECIFICATIONS**

Electrolyte characteristics		
Electrolyte type	Acidic	
Metal content	200 g/l CuSO4-5H2O	
pH value	(not monitored)	
Operating temperature	25 (22 - 27) °C	
Current density	1.0 (0.5 - 2.5) A/dm <sup>2</sup>	
Anode material	Soluble / Insoluble	

### Cross-Sections After Thru-cup® EVF-N Plating

Surface thickness: Hole size:

20 µm Diameter 125 µm Depth 85 µm



1.5 A/dm<sup>2</sup>

2.0 A/dm<sup>2</sup>

### Needed Additives and Optional Products

- EVF-2A-10X
- EVF-2B-2X
- EVF-N

Blind via hole filling with low dimple and simultaneous throughhole plating with high throwing power





### **YOUR CONTACT**

Do you have a specific question or would you like a no-obligation quote calculation? Our specialist will be happy to help you with any technical questions you might have.

2.5 A/dm<sup>2</sup>



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