

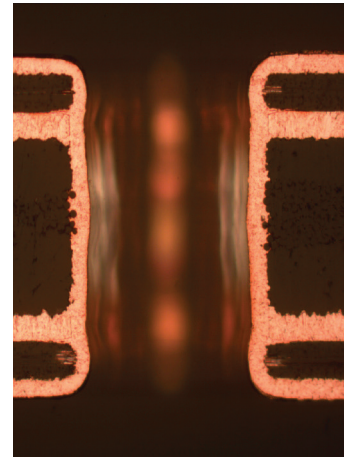
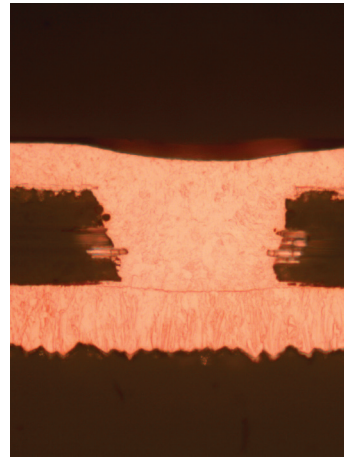
MacuSpec VF-TH 200

Simultaneous Via Filling and Through Hole Plating Copper Metallization

Via Filling and Through Hole Plating: Now in a Single, Easy to Use Process!

MacDermid Enthone's **MacuSpec VF-TH 200** is the metallization process to choose when efficiency, reliability and cost savings are the goal. Developed from patented technologies and highly honed technical knowledge, VF-TH 200 is capable of simultaneously filling vias and plating through holes with electrolytic copper that has great physical properties and a wide range of structure sizes. For the first time ever, vias from 3x3 to 5x3 can be filled while plating through holes to exact specification in the same bath. Beyond the increased performance of this revolutionary copper plating technology, the savings in cycle time, processing costs and increased reliability alone justify the switch to MacuSpec VF-TH 200.

MacuSpec VF-TH 200 allows for optimal integration with MacDermid Enthone's industry leading direct metallization processes, providing unique options in materials selection and environmental benefits that are unavailable anywhere else.



KEY FEATURES

- Simultaneous filling of copper vias and plating of through holes
- Excellent for pattern plating applications such as MSAP and SL-HDI
- Fills 3x3 to 5x3 mil vias within 60 minutes with dimples of less than 10 microns
- No predip required
- Fully analyzable by CVS and common analytical tools
- Compatible with the largest portfolio of direct metallization solutions worldwide



MacDermid Enthone

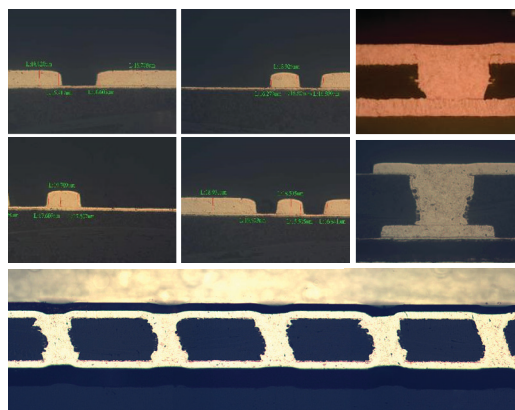
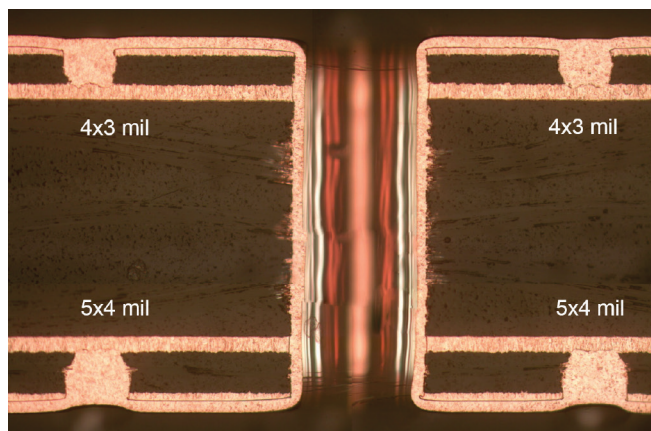
CIRCUITRY SOLUTIONS

MacuSpec VF-TH 200

Simultaneous Via Filling and Through Hole Plating Copper Metallization

A Metallization Solution with an Astounding Array of Applications

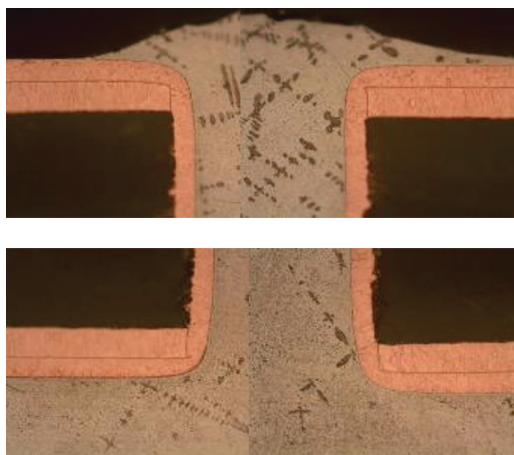
With the vast array of board configurations, routing pathways and unique designs comes the need for numerous adjustments in the production environment. **MacuSpec VF-TH 200** reduces the number of processing steps and can be combined with a wide array of chemical processes to tackle anything your design team can dream up. MacuSpec VF-TH 200 can fill 3x3 mil to 5x3 mil vias in less than an hour with optimal physical properties and structural attributes.



Fewer Process Steps Without a Reduction in Reliability

	Break Force (lbf)	Weight (g)	Elongation (%)	Tensile Strength (PSI)	Approximate Thickness (mils)
1	62.71	1.0703	19.68	42,773.87	3.1
2	62.05	1.0222	22.42	44,309.72	2.96
3	59.5	1.0927	19.67	39,752.55	3.17
4	60.74	1.0343	18.67	42,869.16	3
5	61.2	1.0018	21.72	44,593.25	2.91
6	57.75	1.0121	21.91	41,655.55	2.94
7	58.2	1.0242	20.14	41,481.89	2.97
8	62.72	1.0421	18.94	43,938.73	3.02
9	60.9	1.0648	18.83	41,751.31	3.09
10	56.69	1.0648	20.73	38,868.44	3.09
Mean			20.27	42,199.45	3.02

VF-TH 200 passes IPC 6012D, DS, DA and 6013D.
More than 40,000 PSI, and greater than 18% elongation.



VF-TH 200 - 6x solder shock, 288° C, 10 sec.



macdermidalpha.com
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MacDermid Enthone is a product brand of MacDermid Alpha Electronics Solutions.

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