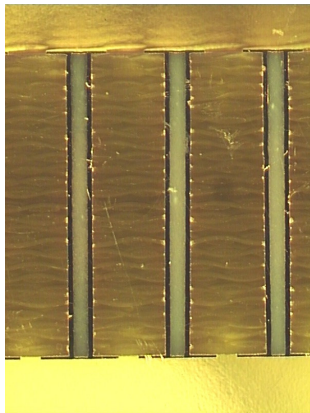




THE POWER OF EI

Silica Epoxy Hole Fill

EI Silica Epoxy is a non-conductive hole fill material containing EI Driclad[®] resin and amorphous silica. Silica Epoxy Hole Fill is applied via a lamination process, allowing for complete fill of high-aspect-ratio holes.



High aspect holes completely filled. No voids means no stress concentrations.

Features & Benefits

- **Void Free Filling** When used with EI's special lamination, Silica Epoxy Hole Fill provides void free filling of high aspect ratio PTH's
- **Low Coefficient of Thermal Expansion (CTE)** Reduces CTE mismatch and increases solder joint reliability
- **Smooth Surface** Cured material can be machined smooth for over plating or re-lamination allowing efficient board area utilization
- **No Shrinkage** Pressurized cure and formulation eliminates shrinkage resulting in flush filling
- **Low Off Gassing** Meets the ASTM E595 off gassing specifications for aerospace requirements
- **Excellent Thermal/Hydro Performance** Provides improved ability to withstand both hot and wet environments
- **Crack Resistant** Good crack resistance ensures reliability of filled PTH's

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Silica Epoxy Holefill Properties

Property Tested		Test Method
Electrical		
Permittivity (Dielectric Constant @1 MHz)	3.54	IPC TM-650/2.5.5.5C
Loss Tangent (Loss Factor @ 1 MHz)	0.012	IPC TM-650/2.4.41
Thermal		
Glass Transition Temperature (°C), (Minimum)	160	IPC TM-650/2.4.25
Decomposition Temperature (Air),(°C)	321	IPC TM-650/2.3.40
Flammability	Pass *	UL94-V0
Out Gassing- Total Mass Lost, (TML)%	0.16	ASTM E595-93
Physical		
Resin Type	Multifunctional Epoxy	
Silica (% By Weight)	54	EI-TGA
CTE Below Tg (X,Y,Z) (ppm/C)	30	IPC TM-650/2.4.41
CTE Above Tg (X,Y,Z) (ppm/C)	100	IPC TM-650/2.4.41
Pressure Vessel Test (8hr.)	Pass	IPC TM-650/2.6.16
Moisture, % Gain (24 hr/RT)	0.19	IPC TM-650/2.6.2.1

* The flame retardant in EI Pramid epoxy is TBBPA (RoHS compliant)