Fluon+™ EA-2000

Circuit Board Material for High-Speed and High-Frequency Laminates

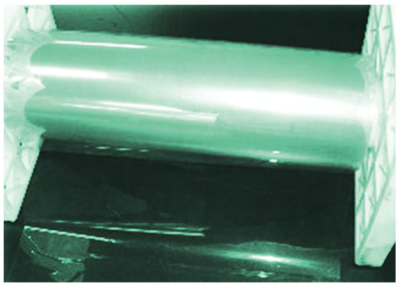
Fluon+™ EA-2000 is a modified fluoropolymer for use in high frequency and high speed circuit boards that are intended for use in commercial millimeter wave and RF applications. It exhibits very low loss and low dielectric constant as well as excellent adhesion to smooth copper foils.

Fluon+™ EA-2000 film can be laminated onto PCBs using both regular FR-4 compatible processing conditions and high temperature PTFE processing conditions.

Fluon+™ EA-2000 is supplied as a film or a liquid dispersion, and can be compounded with other materials for many CCL, FCCL, and RCC requirements.

Features

- Low dielectric constant (2.0) and low dissipation factor (0.001)
- Excellent adhesion to smooth copper foils – minimizes loss and delay for high frequency applications due to the skin effect
- Stable dielectric constant with varying temperatures and frequencies
- Very low moisture uptake (0.03%)



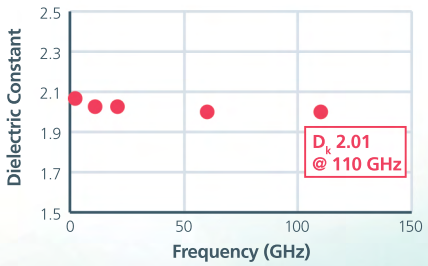
Film

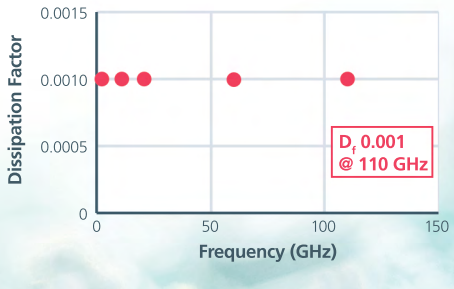
EA-2000 aqueous dispersion

Applications

- Automotive radar applications
- 5G cellular telecommunication systems - power amplifiers and antennas
- Other mmWave applications

Dielectric Constant & Dissipation Factor





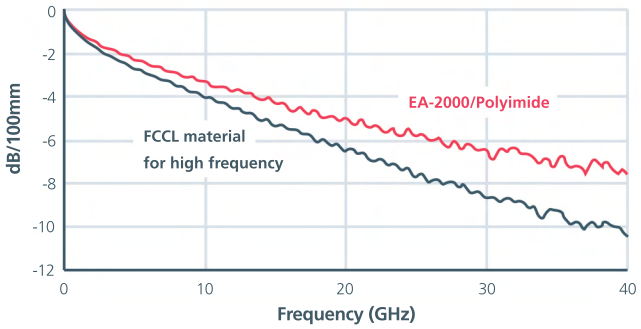
Adhesion to Copper Foils

Copper Foil	Surface Roughness		Adhesion Strength (N/cm)
	Rz (µm)	Ra (µm)	
Regular Copper Foil	7.2	1.45	>18
Low Profile	3.0	0.25	18
Profile Free	1.2	0.19	17
Non-roughened	0.9	0.13	12

Typical Physical Properties

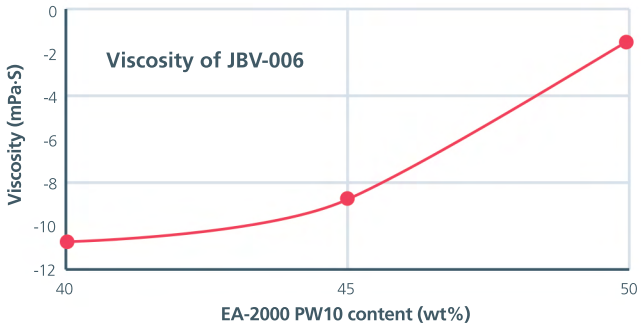
Property	Units	Value	Test Method
Dielectric Constant (Dk) @20GHz	-	2.0	ASTM D150
Dielectric Tangent (Df) @20GHz	-	0.001	ASTM D150
Specific Gravity	g/cm^3	2.13	Room Temperature
Glass Transition Temperature (Tg)	°C	94	DMA
Melting Point (Tm)	°C	300	DSC
5wt% Thermal Decomposition Temperature	°C	490	DTA (10°C/min)
Flammability	-	VTM-0	UL94
Water Absorption	%	0.03	IPC-TM-650 2.6.2
Tensile Modulus	GPa	0.3	@23°C DMA
Volume Resistivity	Ω·cm	6.5×10^{17}	ASTM D257

Transmission Loss



Conditions	
Micro-strip line (without cover-lay film)	
Line length	100 mm
Impedance	50Ω ~ 60Ω
Pre-treatment	105°C x 24 h (dry)

Dispersion



Contents	Unit
Solid content (EA-2000 PW10)	40-45%
Stabilizer X*	2-3%
Solvent*	NMP etc.

AGC Chemicals Americas, Inc.
55 E. Uwchlan Avenue, Suite 201
Exton, PA 19341, United States of America

Telephone: +1 610-423-4300
Toll Free (US only): 800-424-7833 / Fax: +1 610-423-4305

www.agcchem.com
Visit our website for compliance information and industry certifications.