

DuPont™ WPR Series End Use Properties and Test Data

WPR/Permanent Dry Photoresist

Technical Bulletin TB-0477

Specification/ Test/Examination	Test Method	Typical Test Requirement	Result	Typical Value
Physical				
Density				
Raw Film	Wt. density	Informational only	---	3.27 mg/cm ² per mil of thickness
After cure				1.35 g/cc after cure
Tg	DMA	Informational	---	70-74°C dependent on processing
CTE	DSC	Informational	---	69 ppm < Tg 86-89 ppm > Tg
Modulus	Instron	Informational	---	2.1-3.3 GPa
Ultimate Strain	Instron	Informational	---	1.8%
Ultimate Strength	Instron	Informational	---	47.6 MPa
Poissons Ratio	Instron	Informational	---	0.34
Moisture Absorption	Wt. Gain	Informational	---	1.4% @45°C and 95% RH for 24 hr
Thermal Conductivity	ASTM-C-518	Informational	---	0.204 W/M/Deg. K
Chemical				
Resistance to solvents and fluxes	IPC-SM-840B, Paragraph 4.8.6	No visual surface degradation	Pass	No damage
Solderability/ Resistance to solder 260°C (500°F) /10 secs	IPC-SM-840B, Paragraph 4.8.9.1 and 4.8.9.2	Visual	Pass	No defects
Non-nutrient	IPC-SM-840B, Paragraph 4.8.1.1, MIL-P-13949F	No support of, or attack by, selected fungi	Pass	No growth or attack
Hydrolytic stability 97±2°C/90-98% RH/28 days	IPC-SM-840B	No visual degradation IPC-TM 2.6.11	Pass	No degradation



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Test/Examination	Specification/ Test Method	Requirement	Typical Test Result	Typical Value
Electrical				
Dielectric constant at 25°C, 50% RH, 1 MHz	ASTM D-150	Informational	—	3.8
Dielectric loss factor at 25°C, 50% RH, 1 MHz	ASTM D-150	Informational	—	4.2×10^{-2}
Dissipation factor at 25°C, 50% RH, 1 MHz	ASTM D-150	Informational	—	1.1×10^{-2}
Surface resistivity at 25°C, 50% RH	ASTM D-257	Informational	—	3.6×10^{13} ohms
Volume resistivity at 25°C, 50% RH	ASTM D-257	Informational	—	9×10^{14} ohm-cm
Mechanical				
Thermal shock at -65°C to +125-C	MIL-P-55110D, Method 107D, IPC-SM-840B	100 cycles	Pass with and without conformal coating	—

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Caution : Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement", H-51459.



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