

## Arlon 47N Quick Cure Epoxy Low-Flow Prepreg

Category : Polymer , Thermoset , Epoxy , Epoxy, Thermally Conductive

### Material Notes:

47N is a low-flow epoxy prepreg engineered for binding multilayer epoxy rigid-flex or attaching heat sinks to multilayer PCBs. An optional low lamination temperature protects components already mounted on the PCB. Tetrafunctional modified epoxy resin system with a Tg of 130°C. Optimized bond to aluminum and copper heat sinks - typical lap shear 1000 psi. Cure temperature as low as 150°C. Engineered with discrete flow ranges and fiberglass styles for optimal process flexibility. Electrical and mechanical properties meeting the requirements of IPC-4101/21, modified to be "Low-Flow". RoHS/WEEE compliant. Cost competitive for high volume commercial applications. Typical Applications: Bonding multilayer epoxy rigid-flex. Attaching heat sinks to multilayer PCBs. Dielectric insulators. [This data represents typical values for the production material and should not be used as material specifications. Information provided by ARLON Silicone Technologies Division.]

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Arlon-47N-Quick-Cure-Epoxy-Low-Flow-Prepreg.php](http://www.lookpolymers.com/polymer_Arlon-47N-Quick-Cure-Epoxy-Low-Flow-Prepreg.php)

Physical Properties	Metric	English	Comments
Density	1.75 g/cc	0.0632 lb/in <sup>3</sup>	ASTM D792 Method A
Water Absorption	0.10 %	0.10 %	IPC TM-650 2.6.2.1

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	17.9 GPa	2600 ksi	IPC TM-650 2.4.18.3
Poissons Ratio	0.17	0.17	ASTM D3039
Peel Strength	1.58 kN/m	9.00 pli	After Thermal Stress; IPC TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	15.0 - 17.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	8.33 - 9.44 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	IPC TM-650 2.4.41
CTE, linear, Transverse to Flow	85.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature $\leq$ 130 $^\circ\text{C}$	47.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature $\leq$ 266 $^\circ\text{F}$	z direction; IPC TM-650 2.4.24
Thermal Conductivity	0.250 W/m-K	1.74 BTU-in/hr-ft <sup>2</sup> - $^\circ\text{F}$	ASTM E1461
Glass Transition Temp, Tg	130 $^\circ\text{C}$	266 $^\circ\text{F}$	DSC; IPC TM-650 2.4.25
Decomposition Temperature	295 $^\circ\text{C}$	563 $^\circ\text{F}$	Onset; IPC TM-650 2.3.41
	315 $^\circ\text{C}$	599 $^\circ\text{F}$	5 percent; IPC TM-650 2.3.41
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	5.10e+13 ohm-cm	5.10e+13 ohm-cm	C96/35/90; IPC TM-650 2.5.17.1
	7.40e+13 ohm-cm	7.40e+13 ohm-cm	E24/125; IPC TM-650 2.5.17.1
Surface Resistance	1.50e+12 ohm	1.50e+12 ohm	E24/125; IPC TM-650 2.5.17.1
	8.80e+12 ohm	8.80e+12 ohm	C96/35/90; IPC TM-650 2.5.17.1
Dielectric Constant	4.3	4.3	IPC TM-650 2.5.5.3
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	39.4 kV/mm	1000 kV/in	IPC TM-650 2.5.6.2
Dissipation Factor	0.022	0.022	IPC TM-650 2.5.5.3
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Descriptive Properties	Value	Comments
IPC Delamination - T260 (minutes)	18	IPC TM-650 2.4.24.1
IPC Delamination - T288 (minutes)	0	
IPC Delamination - T300 (minutes)	0	

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