

## Arlon 44N Multifunctional Microdispersed Ceramic Filled Epoxy-Fiberglass Prepreg

Category : Polymer , Thermoset , Epoxy

### Material Notes:

Arlon 44N is a high resin content multifunctional (175°C) epoxy prepreg system with a proprietary microdispersed ceramic filler system. 44N is engineered for the filling of clearance holes in thin metal cores such as 0.006" Copper-invar-Copper or via holes in sequentially laminated MLB designs. Based on Arlon's 45N, the 44N system is compatible with conventional epoxy lamination fabrication. Microdisperse ceramic filled to minimize resin shrinkage and cracking in filled clearance holes. Prepreg format eliminated the need for messy plate fill material in high volume applications. High Tg compatible with conventional multifunctional epoxy processing. Filled system has reduced Z-direction expansion and improved thermal conductivity for improved plated through hole reliability. Suitable for most lead-free applications. RoHS/WEEE compliant. Typical Applications: Automotive Under-hood applications, Backplanes and Mother Boards, Ball Grid Array Packaging, High layer count MLBs. 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-44N-Multifunctional-Microdispersed-Ceramic-Filled-Epoxy-Fiberglass-Prepreg.php](http://www.lookpolymers.com/polymer_Arlon-44N-Multifunctional-Microdispersed-Ceramic-Filled-Epoxy-Fiberglass-Prepreg.php)

Physical Properties	Metric	English	Comments
Density	1.85 g/cc	0.0668 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	19.3 GPa	2800 ksi	IPC TM-650 2.4.18.3
Poissons Ratio	0.15	0.15	ASTM D3039
Peel Strength	1.40 kN/m	8.00 pli	To Copper (1 oz./35 micron); After Process Solutions; IPC TM-650 2.4.8
	1.40 kN/m	8.00 pli	To Copper (1 oz./35 micron); After Thermal Stress; IPC TM-650 2.4.8
	1.40 kN/m	8.00 pli	To Copper (1 oz./35 micron); At Elevated Temperatures; IPC TM-650 2.4.8.2

Thermal Properties	Metric	English	Comments
CTE, linear	14.0 - 16.0 µm/m-°C	7.78 - 8.89 µin/in-°F	IPC TM-650 2.4.41
CTE, linear, Transverse to Flow	55.0 µm/m-°C	30.6 µin/in-°F	z, below Tg; IPC TM-650 2.4.24
	200 µm/m-°C	111 µin/in-°F	z, above Tg; IPC TM-650 2.4.24
Thermal Conductivity	0.300 W/m-K	2.08 BTU-in/hr-ft <sup>2</sup> -°F	ASTM E1461

Glass Transition Temp, Tg Thermal Properties	175 °C Metric	347 °F English	DSC: IPC TM-650 2.4.25 Comments
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.60e+13 ohm-cm	2.60e+13 ohm-cm	C96/35/90; IPC TM-650 2.5.17.1
	3.30e+13 ohm-cm	3.30e+13 ohm-cm	E24/125; IPC TM-650 2.5.17.1
Surface Resistance	4.00e+10 ohm	4.00e+10 ohm	C96/35/90; IPC TM-650 2.5.17.1
	2.90e+13 ohm	2.90e+13 ohm	E24/125; IPC TM-650 2.5.17.1
Dielectric Constant	4.2 - 4.6 @Frequency 1.00e+6 Hz	4.2 - 4.6 @Frequency 1.00e+6 Hz	may vary with resin %; IPC TM-650 2.5.5.3
Dielectric Strength	59.1 kV/mm	1500 kV/in	IPC TM-650 2.5.6.2
Dissipation Factor	0.025 @Frequency 1.00e+6 Hz	0.025 @Frequency 1.00e+6 Hz	IPC TM-650 2.5.5.3
Arc Resistance	65 sec	65 sec	IPC TM-650 2.5.1

Descriptive Properties	Value	Comments
Z-Axis Expansion (%)	2.4	IPC TM-650 2.4.24 (50-260°C)

## Contact Songhan Plastic Technology Co.,Ltd.

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