

Arlon 38N High Performance Polyimide Low-Flow

Category : Polymer , Thermoset , Polyimide, TS

Material Notes:

38N is an improved polyimide low-flow prepreg suitable for bonding multilayer polyimide rigid-flex, attaching heat sinks to polyimide MLBs, or other applications where minimal and uniform resin flow is required. Novel chemistry ensuring faster and more uniform resin cure for minimal and consistent resin flow, preventing excessive flow into clearance/relief areas. $T_g = 200^\circ\text{C}$ and expansion characteristics typical of polyimide greatly improves PTH reliability. Improved bond strength to Kapton® polyimide of up to 50% compared with conventional polyimide low-flow or no-flow products. Curable at temperatures as low as 350°F . Excellent thermal stability. Improved bond strength to copper and other metals for excellent performance in heat sink bonding applications. Electrical and mechanical properties meeting the requirements of IPC-4101/42. Compatible with lead-free solder processing. RoHS/WEEE compliant. Typical Applications: Bonding multilayer polyimide rigid-flex. Attaching heat sinks to polyimide MLBs. Other applications where minimal and uniform resin flow is required. 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-38N-High-Performance-Polyimide-Low-Flow.php

Physical Properties	Metric	English	Comments
Water Absorption	$\leq 1.0\%$	$\leq 1.0\%$	IPC TM-650 2.6.2.1

Mechanical Properties	Metric	English	Comments
Tensile Strength	221 MPa	32000 psi	IPC TM-650 2.4.18.3
Modulus of Elasticity	14.5 GPa	2100 ksi	IPC TM-650 2.4.18.3
Flexural Strength	414 MPa	60000 psi	IPC TM-650 2.4.4
Poissons Ratio	0.18	0.18	ASTM D3039
Shear Modulus	6.14 GPa	891 ksi	Calculated
Peel Strength	0.912 kN/m	5.20 pli	To Kapton, After Solder
	1.03 kN/m	5.90 pli	To Kapton, As Received
	1.49 kN/m	8.50 pli	To Copper (1 oz./35 micron); After Thermal Stress; IPC TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	$17.0\ \mu\text{m}/\text{m}\cdot^\circ\text{C}$	$9.44\ \mu\text{in}/\text{in}\cdot^\circ\text{F}$	IPC TM-650 2.4.41
CTE, linear, Transverse to Flow	$54.0\ \mu\text{m}/\text{m}\cdot^\circ\text{C}$	$30.0\ \mu\text{in}/\text{in}\cdot^\circ\text{F}$	z, below T_g ; IPC TM-650 2.4.24
	$157\ \mu\text{m}/\text{m}\cdot^\circ\text{C}$	$87.2\ \mu\text{in}/\text{in}\cdot^\circ\text{F}$	z, above T_g ; IPC TM-650 2.4.24

Thermal Properties	0.300 W/m-K Metric	2.08 BTU-in/hr-ft ² -°F English	ASTM E1461 Comments
Glass Transition Temp, Tg	200 °C	392 °F	TMA; IPC TM-650 2.4.24
Decomposition Temperature	311 °C	592 °F	Onset; IPC TM-650 2.3.41
	330 °C	626 °F	5 percent; IPC TM-650 2.3.41
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	8.20e+13 ohm-cm	8.20e+13 ohm-cm	C96/35/90; IPC TM-650 2.5.17.1
	4.70e+15 ohm-cm	4.70e+15 ohm-cm	E24/125; IPC TM-650 2.5.17.1
Surface Resistance	4.40e+12 ohm	4.40e+12 ohm	C96/35/90; IPC TM-650 2.5.17.1
	1.20e+15 ohm	1.20e+15 ohm	E24/125; IPC TM-650 2.5.17.1
Dielectric Constant	4.25 @Frequency 1.00e+6 Hz	4.25 @Frequency 1.00e+6 Hz	may vary with resin %; IPC TM-650 2.5.5.3
Dielectric Strength	63.0 kV/mm	1600 kV/in	IPC TM-650 2.5.6.2
Dissipation Factor	0.010 @Frequency 1.00e+6 Hz	0.010 @Frequency 1.00e+6 Hz	IPC TM-650 2.5.5.3
Arc Resistance	125 sec	125 sec	IPC TM-650 2.5.1

Descriptive Properties	Value	Comments
IPC Delamination - T260 (minutes)	50	IPC TM-650 2.4.24.1
IPC Delamination - T288 (minutes)	5	IPC TM-650 2.4.24.1
IPC Delamination - T300 (minutes)	3	IPC TM-650 2.4.24.1
Z-Axis Expansion (%)	1.5	IPC TM-650 2.4.24 (50-260°C)

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