

## Park Electrochemical Nelco® N8000 Cyanate Ester Epoxy Laminate and Prepreg

Category : Polymer , Thermoset , Epoxy

### Material Notes:

The Nelco N8000 is a high-Tg cyanate ester laminate and prepreg system that provides superior performance and product integrity and is ideal for board designs with higher layer counts, finer lines and spaces and larger panel sizes. Key Features and Benefits: High thermal performance, Self adhesive bond to foam cores, Superior electrical properties, Typical Cyanate Ester processing, S-glass and Quartz options. Applications: Fine-Line Multilayers, Backplanes, Surface-Mount Multilayers, BGA Multilayers, MCM-L's, Direct Chip Attach, Automotive Underhood, Automotive Wireless Communications, High Speed Computing, Radomes and Secondary Aerospace Structure. Information provided by Park Electrochemical Corp.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Park-Electrochemical-Nelco-N8000-Cyanate-Ester-Epoxy-Laminate-and-Prepreg.php](http://www.lookpolymers.com/polymer_Park-Electrochemical-Nelco-N8000-Cyanate-Ester-Epoxy-Laminate-and-Prepreg.php)

Physical Properties	Metric	English	Comments
Density	1.73 g/cc	0.0625 lb/in <sup>3</sup>	50% resin content
Water Absorption	<= 0.050 %	<= 0.050 %	IPC-TM-650.2.6.2.1

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	20.7 GPa	3000 ksi	X; ASTM D3039
	20.7 GPa	3000 ksi	Y; ASTM D3039
Poissons Ratio	0.14	0.14	X; ASTM D3039
	0.14	0.14	Y; ASTM D3039
Peel Strength	1.31 kN/m	7.50 pli	1 oz. Cu, at elevated temperature; IPC-TM-650.2.4.8.2a
	1.40 kN/m	8.00 pli	1 oz. Cu, after exposure to process solutions; IPC-TM-650.2.4.8
	1.40 kN/m	8.00 pli	1 oz. Cu, after solder float; IPC-TM-650.2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 - 13.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.11 - 7.22 $\mu\text{in}/\text{in}\cdot\text{°F}$	X/Y; IPC-TM-650.2.4.41
	@Temperature -40.0 - 125 $\text{°C}$	@Temperature -40.0 - 257 $\text{°F}$	
Glass Transition Temp, Tg	240 $\text{°C}$	464 $\text{°F}$	TMA; IPC-TM-650.2.4.24c
	250 $\text{°C}$	482 $\text{°F}$	DSC; IPC-TM-650.2.4.25c
	300 $\text{°C}$	572 $\text{°F}$	DMA (Tan $\delta$ Peak); IPC-TM-650.2.4.24.3

Thermal Properties	Metric	English	Comments
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Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	C - 96/35/90; IPC-TM-650.2.5.17.1
	1.00e+13 ohm-cm	1.00e+13 ohm-cm	E - 24/125; IPC-TM-650.2.5.17.1
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	C - 96/35/90; IPC-TM-650.2.5.17.1
	1.00e+13 ohm	1.00e+13 ohm	E - 24/125; IPC-TM-650.2.5.17.1
Dielectric Constant	3.5	3.5	50% Resin Content; Stripline; IPC-TM-650.2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
	3.6	3.6	50% Resin Content; Split Post Cavity
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
3.6	3.6	50% Resin Content; Stripline; IPC-TM-650.2.5.5.5	
@Frequency 2.50e+9 Hz	@Frequency 2.50e+9 Hz		
3.7	3.7	50% Resin Content; RF Impedance; IPC-TM-650.2.5.5.9	
@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz		
Dielectric Strength	65.0 kV/mm	1650 kV/in	IPC-TM-650.2.5.6.2
Dielectric Breakdown	>= 50000 V	>= 50000 V	IPC-TM-650.2.5.6
Dissipation Factor	0.0070	0.0070	50% Resin Content; Split Post Cavity
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
	0.011	0.011	50% Resin Content; Stripline; IPC-TM-650.2.5.5.5
	@Frequency 2.50e+9 Hz	@Frequency 2.50e+9 Hz	
0.011	0.011	50% Resin Content; Stripline; IPC-TM-650.2.5.5.5	
@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz		
Arc Resistance	160 sec	160 sec	IPC-TM-650.2.5.1

Descriptive Properties	Value	Comments
Methylene Chloride Resistance (% Weight Change)	0.34	IPC-TM-650.2.3.4.3

Descriptive Properties	Value	Comments
T260 (minutes)	60+	IPC-TM-650.2.4.24.1
T288 (minutes)	30+	IPC-TM-650.2.4.24.1
Z Axis Expansion (%)	2.5	50-260°C; IPC-TM-650.2.4.41

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