

Arlon 25FR Low-Cost Ceramic Hydrocarbon

Category : Polymer , Thermoset

Material Notes:

High Frequency, Low Loss Thermoset Laminate and Prepreg for Double-sided, Multilayer and Mixed Dielectric Printed Circuit Boards
 Low loss ceramic-filled thermoset resin
 Tight dielectric tolerance control
 Excellent dimensional stability
 Excellent price/performance ratio
 Benefits: Greater signal integrity
 Wider eye patterns
 Excellent dimensional stability
 Utilizes standard FR-4 processes
 Excellent thermal properties
 Typical Applications: Cellular Base Station Antennas, Power Amplifiers, Down Converters
 High Speed Backplanes
 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-25FR-Low-Cost-Ceramic-Hydrocarbon.php

Physical Properties	Metric	English	Comments
Density	1.80 g/cc	0.0650 lb/in ³	ASTM D792 Method A
Water Absorption	0.090 %	0.090 %	IPC TM-650 2.6.2.1
Thickness	99.1 microns	3.90 mil	Prepreg thickness - glass style 1080
	147 microns	5.80 mil	Prepreg thickness - glass style 2112
	170 microns	6.70 mil	Prepreg thickness - glass style 2313
Outgassing - Total Mass Loss	0.00 %	0.00 %	Collected Volatiles; ASTM E595-90
	@Pressure <=1.33e-10 MPa, Temperature 125 °C	@Pressure <=1.93e-8 psi, Temperature 257 °F	
	0.070 %	0.070 %	
	@Pressure <=1.33e-10 MPa, Temperature 125 °C	@Pressure <=1.93e-8 psi, Temperature 257 °F	Water Vapor Recovered; ASTM E595-90
	0.24 %	0.24 %	ASTM E595-90
	@Pressure <=1.33e-10 MPa, Temperature 125 °C	@Pressure <=1.93e-8 psi, Temperature 257 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength	96.5 MPa	14000 psi	ASTM D882
Flexural Strength	241.48 MPa	35024 psi	ASTM D790
Peel Strength	0.877 kN/m	5.00 pli	After Thermal Stress; IPC TM-650 2.4.8

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	8.89 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	x, before Tg; IPC TM-650 2.4.24
	18.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	10.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	y, before Tg; IPC TM-650 2.4.24
CTE, linear, Transverse to Flow	59.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	32.8 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	z, before Tg; IPC TM-650 2.4.24
Thermal Conductivity	0.450 W/m-K	3.12 BTU-in/hr-ft ² -°F	ASTM E1225
	@Temperature 100 °C	@Temperature 212 °F	
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	4.17e+14 ohm-cm	4.17e+14 ohm-cm	Condition A; IPC TM-650 2.5.17.1
Surface Resistance	8.90e+14 ohm	8.90e+14 ohm	Condition A; IPC TM-650 2.5.17.1
Dielectric Constant	3.58	3.58	C23/50; IPC TM-650 2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	
Dissipation Factor	0.0035	0.0035	C23/50; IPC TM-650 2.5.5.5
	@Frequency 1.00e+10 Hz	@Frequency 1.00e+10 Hz	

Descriptive Properties	Value	Comments
Temperature Coefficient of Dielectric (ppm/°C)	50	IPC TM-650 2.5.5.5 adapted (-10 - 140°C)

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