Arlon CLTE-XT High Precision Ceramic PTFE

Category : Polymer , Thermoplastic , Fluoropolymer , PTFE

Material Notes:

Microwave material for improved thermal management, Excellent dimensional stability with high degree of phase stability vs. temperature.CLTE-XT is a micro-dispersed ceramic PTFE composite utilizing a woven fiberglass reinforcement to provide the highest degree of stability, critical in multi-layer designs.Ceramic/PTFE microwave compositeHigh thermal conductivityLowest Insertion Loss in classLoss Tangent (0.0012)Tightest Dielectric constant and Thickness toleranceElectrical phase stability vs. temperatureBenefits:Excellent thermal stability of Dk and DfPhase stability across temperature High degree of Dimensional stability required for complex, multi-layer boardsExcellent CTE in X, Y and Z directionsTypical Applications:Defense Microwave/RF ApplicationsRadar ManifoldsPhase Fed Array AntennasMicrowave Feed NetworksCNI (communication, navigation and identification) ApplicationsSIGINT, Satellite and Space ElectronicsPhase Sensitive Electronic ApplicationsThis 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-CLTE-XT-High-Precision-Ceramic-PTFE.php

Physical Properties	Metric	English	Comments
Density	2.02 g/cc	0.0730 lb/in³	ASTM D792 Method A
Water Absorption	0.020 %	0.020 %	IPC TM-650 2.6.2.1
Outgassing - Total Mass Loss	0.00 % @Pressure <=1.33e-10 MPa, Temperature 125 °C	0.00 % @Pressure <=1.93e-8 psi, Temperature 257 °F	Collected Volatiles; NASA SP-R-0022A
	0.010 % @Pressure <=1.33e-10 MPa, Temperature 125 °C	0.010 % @Pressure <=1.93e-8 psi, Temperature 257 °F	Water Vapor Recovered; NASA SP-R-0022A
	0.020 % @Pressure <=1.33e-10 MPa, Temperature 125 °C	0.020 % @Pressure <=1.93e-8 psi, Temperature 257 °F	NASA SP-R-0022A

Mechanical Properties	Metric	English	Comments
Tensile Strength	23.4 MPa	3400 psi	Cross; IPC TM-650 2.4.18.3
	27.6 MPa	4000 psi	Machine; IPC TM-650 2.4.18.3
Modulus of Elasticity	1.79 GPa	260 ksi	IPC TM-650 2.4.18.3
Flexural Strength	62.1 MPa	9000 psi	Cross; IPC TM-650 2.4.4
	65.5 MPa	9500 psi	Machine; IPC TM-650 2.4.4

Mechanical Properties	Metric	English	Comments
Poissons Ratio	0.23	0.23	ASTM D3039
Shear Modulus	0.730 GPa	106 ksi	Calculated
Peel Strength	1.58 kN/m	9.00 pli	To Copper (1 oz./35 micron); After Thermal Stress; IPC TM-650 2.4.8
	1.75 kN/m	10.0 pli	To Copper (1 oz./35 micron); After Process Solutions; IPC TM-650 2.4.8
	1.93 kN/m	11.0 pli	To Copper (1 oz./35 micron); At Elevated Temperatures; IPC TM-650 2.4.8.2

Thermal Properties	Metric	English	Comments
CTE, linear	8.00 µm/m-°C @Temperature 50.0 - 150 °C	4.44 µin/in-°F @Temperature 122 - 302 °F	IPC TM-650 2.4.41
CTE, linear, Transverse to Flow	20.0 µm/m-°C @Temperature 50.0 - 150 °C	11.1 µin/in-°F @Temperature 122 - 302 °F	z direction; IPC TM-650 2.4.24
Thermal Conductivity	0.560 W/m-K	3.89 BTU-in/hr-ft²-°F	ASTM E1461
Decomposition Temperature	501 °C	934 °F	Initial; IPC TM-650 2.4.24.6
	554 °C	1030 °F	5 percent; IPC TM-650 2.4.24.6
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.85e+14 ohm-cm	1.85e+14 ohm-cm	E24/125; IPC TM-650 2.5.17.1
	4.25e+14 ohm-cm	4.25e+14 ohm-cm	C96/35/90; IPC TM-650 2.5.17.1
Surface Resistance	5.48e+13 ohm	5.48e+13 ohm	E24/125; IPC TM-650 2.5.17.1
	2.49e+14 ohm	2.49e+14 ohm	C96/35/90; IPC TM-650 2.5.17.1
Dielectric Constant	2.94 @Frequency 1.00e+6 Hz	2.94 @Frequency 1.00e+6 Hz	may vary by thickness; IPC TM-650 2.5.5.3
	2.94 @Frequency 1.00e+10 Hz	2.94 @Frequency 1.00e+10 Hz	may vary by thickness; IPC TM-650 2.5.5.5
	2.79	2.79	

Electrical Properties	Metric	English	Comments
	@Thickness 0.000130 mm, Frequency 1.00e+10 Hz	@Thickness 0.00000510 in, Frequency 1.00e+10 Hz	
	2.89 @Thickness 0.000239 mm, Frequency 1.00e+10 Hz	2.89 @Thickness 0.00000940 in, Frequency 1.00e+10 Hz	
	2.94 @Thickness 0.000635 mm, Frequency 1.00e+10 Hz	2.94 @Thickness 0.0000250 in, Frequency 1.00e+10 Hz	
Dielectric Strength	39.4 kV/mm	1000 kV/in	IPC TM-650 2.5.6.2
Dielectric Breakdown	58000 V	58000 V	IPC TM-650 2.5.6
Dissipation Factor	0.0011 @Temperature -40.0 °C	0.0011 @Temperature -40.0 °F	
	0.0013 @Temperature 140 °C	0.0013 @Temperature 284 °F	
	0.0012 @Frequency 1.00e+6 Hz	0.0012 @Frequency 1.00e+6 Hz	IPC TM-650 2.5.5.3
	0.0012 @Frequency 1.00e+10 Hz	0.0012 @Frequency 1.00e+10 Hz	IPC TM-650 2.5.5.5
Arc Resistance	250 sec	250 sec	IPC TM-650 2.5.1

Descriptive Properties	Value	Comments
IPC Delamination - T260 (minutes)	> 60	IPC TM-650 2.4.24.1
IPC Delamination - T288 (minutes)	> 60	IPC TM-650 2.4.24.1
IPC Delamination - T300 (minutes)	> 60	IPC TM-650 2.4.24.1
Temperature Coefficient of Dielectric (ppm/°C)	-9	IPC TM-650 2.5.5.5
Z-Axis Expansion (%)	1.2	IPC TM-650 2.4.24 (50-260°C)

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com
Email : sales@lookpolymers.com

Tel : +86 021-51131842
Mobile : +86 13061808058
Skype : lookpolymers
Address : United North Road 215,Fengxian District, Shanghai City,China