Arlon® AD270

Polytetrafluoroethylene

Arlon-MED

Message:

Arlon's AD Series is a group of woven fiberglass-reinforced PTFE composite materials designed for use as printed circuit board substrates. These materials combine the excellent low loss electrical properties of PTFE resin with the enhanced value of costeffective heavier fiberglass styles to provide low cost laminate materials suitable for high volume commercial wireless communication applications.

The AD Series is currently available in a limited combination of dielectric thickness (0.015" - 0.062") and dielectric constant (2.5 - 3.5). Thicker dielectrics can be developed to meet customer requirements. The higher weight ratio of fiberglass to PTFE resin yields laminates with greater dimensional stability than is normally expected of PTFE-based substrates.

Stability of PTFE over a wide frequency range and low loss makes AD Series materials ideal for a variety of microwave and R/F applications in telecom industry. AD Series laminate materials may be processed with standard PTFE materials. Because there is a relatively higher percentage of fiberglass, thermal expansion is reduced in all directions, improving plated through hole reliability.

Filler / Reinforcement Glass Fiber Features Fast Molding Cycle Good Dimensional Stability Uses Appliance Components Electrical/Electronic Applications Forms Pellets Physical Nominal Value Unit Specific Gravity 2.40 g/cm³ ASTM D792A Water Absorption (23°C, 24 hr) 0.070 % ASTM D570 Mechanical Nominal Value Unit Test Method Tensile Modulus International Stability ASTM D570	General Information			
Features Fast Molding Cycle Good Dimensional Stability Uses Appliance Components Electrical/Electronic Applications Forms Pellets Physical Nominal Value Unit Specific Gravity 2.40 g/cm³ ASTM D792A Water Absorption (23°C, 24 hr) 0.070 % ASTM D570 Mechanical Nominal Value Unit Test Method Tensile Modulus	Filler / Reinforcement	Glass Fiber		
Good Dimensional Stability Uses Appliance Components Electrical/Electronic Applications Forms Pellets Physical Nominal Value Unit Specific Gravity 2.40 g/cm³ ASTM D792A Water Absorption (23°C, 24 hr) 0.070 % ASTM D570 Mechanical Nominal Value Unit Test Method Tensile Modulus Nominal Value Unit Test Method	Features	Fast Molding Cycle		
Uses Appliance Components Electrical/Electronic Applications Forms Pellets Physical Nominal Value Unit Test Method Specific Gravity 2.40 g/cm³ ASTM D792A Water Absorption (23°C, 24 hr) 0.070 % ASTM D570 Mechanical Nominal Value Unit Test Method Tensile Modulus		Good Dimensional Stability		
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Electrical/Electronic Applications Forms Pellets Physical Nominal Value Unit Test Method Specific Gravity 2.40 g/cm³ ASTM D792A Water Absorption (23°C, 24 hr) 0.070 % ASTM D570 Mechanical Nominal Value Unit Test Method Tensile Modulus ASTM D638 ASTM D638	Uses	Appliance Components		
Forms Pellets Physical Nominal Value Unit Test Method Specific Gravity 2.40 g/cm³ ASTM D792A Water Absorption (23°C, 24 hr) 0.070 % ASTM D570 Mechanical Nominal Value Unit Test Method Tensile Modulus		Electrical/Electronic Applications		
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PhysicalNominal ValueUnitTest MethodSpecific Gravity2.40g/cm³ASTM D792AWater Absorption (23°C, 24 hr)0.070%ASTM D570MechanicalNominal ValueUnitTest MethodTensile ModulusASTM D638	Forms	Pellets		
Specific Gravity2.40g/cm³ASTM D792AWater Absorption (23°C, 24 hr)0.070%ASTM D570MechanicalNominal ValueUnitTest MethodTensile ModulusASTM D638	Physical	Nominal Value	Unit	Test Method
Water Absorption (23°C, 24 hr) 0.070 % ASTM D570 Mechanical Nominal Value Unit Test Method Tensile Modulus ASTM D638	Specific Gravity	2.40	g/cm³	ASTM D792A
Mechanical Nominal Value Unit Test Method Tensile Modulus ASTM D638	Water Absorption (23°C, 24 hr)	0.070	%	ASTM D570
Tensile Modulus ASTM D638	Mechanical	Nominal Value	Unit	Test Method
1	Tensile Modulus			ASTM D638
23°C ' 3560 MPa	23°C ¹	3560	МРа	
23°C ² 4870 MPa	23℃ ²	4870	МРа	
Flexural Modulus (23°C)3720MPaASTM D790	Flexural Modulus (23°C)	3720	МРа	ASTM D790
Compressive Modulus2520MPaASTM D695	Compressive Modulus	2520	МРа	ASTM D695
Films Nominal Value Unit Test Method	Films	Nominal Value	Unit	Test Method
Tensile Strength ASTM D882	Tensile Strength			ASTM D882
MD : Yield 144 MPa	MD : Yield	144	МРа	
TD : Yield 119 MPa	TD : Yield	119	МРа	
Peel Strength ³ -2.5 kN/m Internal Method	Peel Strength ³	-2.5	kN/m	Internal Method
Coefficient of Linear Thermal Expansion	Coefficient of Linear Thermal Expansion			
X Axis : 0 to 100°C 1.2E-5 cm/cm/°C Internal Method	X Axis : 0 to 100°C	1.2E-5	cm/cm/°C	Internal Method
Y Axis : 0 to 100°C 1.5E-5 cm/cm/°C Internal Method	Y Axis : 0 to 100°C	1.5E-5	cm/cm/°C	Internal Method
Z Axis : 0 to 100°C 9.5E-5 cm/cm/°C	Z Axis : 0 to 100°C	9.5E-5	cm/cm/°C	
Breakdown Voltage > 45000 V ASTM D149	Breakdown Voltage	> 45000	V	ASTM D149
Thermal Nominal Value Unit Test Method	Thermal	Nominal Value	Unit	Test Method

Thermal Conductivity (100°C)	0.24	W/m/K	ASTM C177
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	4.5E+7	ohms	Internal Method
Volume Resistivity	1.2E+15	ohms·cm	Internal Method
Dielectric Constant (23°C)	2.70		Internal Method
Dissipation Factor (10.0 GHz)	2.3E-3		Internal Method
Arc Resistance	> 180	sec	ASTM D495
Flammability	Nominal Value	Unit	Test Method
Flame Rating	V-0		UL 94
NOTE			
1.	TD		
2.	MD		
3.	After Thermal Stress		

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