

Arlon® 25FR

Polytetrafluoroethylene

Arlon-MED

Message:

Arlon 25N and 25FR are woven fiberglass reinforced, ceramic-filled composite materials engineered for use in microwave and RF multilayer printed circuit boards. Combining a non-polar thermoset resin system with a controlled-expansion ceramic filler, 25N and 25FR offer low dielectric constant and loss combined with a low Thermal Coefficient of Dielectric Constant (TCER) for signal stability over a wide ambient temperature range. Designed for use in multilayer packages, 25N and 25FR offer prepregs that are identical in chemical composition and physical properties with their copper clad laminates for a completely homogeneous finished package for optimal signal integrity.

The low dielectric constant (Er) and loss properties, low thermal coefficient of dielectric constant (TCER), and excellent physical stability characteristics offered by 25N and 25FR materials make them ideal for wireless and digital applications, such as cellular telephones, down converters, low noise amplifiers, antennas and other advanced design circuits.

Processing for 25N and 25FR materials is consistent with processing for standard high temperature thermoset based printed circuit board substrates.

General Information			
Filler / Reinforcement	Ceramic Fiber		
	Glass Fiber		
Features	Fast Molding Cycle		
	Good Dimensional Stability		
Uses	Electrical/Electronic Applications		
UL File Number	E80166		
Forms	Pellets		
Physical	Nominal Value	Unit	Test Method
Specific Gravity ¹	1.80	g/cm ³	ASTM D792A
Water Absorption ² (23°C, 24 hr)	0.090	%	Internal Method
Volatile Matter ³	0.0	%	
Peel Strength ⁴	875.6	N/m	Internal Method
Total Mass Loss ⁵ (125°C)	> 0.24	%	
Water Vapor - Recovered	0.070	%	
Mechanical	Nominal Value	Unit	Test Method
Flexural Strength (23°C)	241	MPa	ASTM D790A
Films	Nominal Value	Unit	Test Method
Tensile Strength - MD ⁶ (Yield)	96.5	MPa	ASTM D882A
Thermal	Nominal Value	Unit	Test Method
CLTE - Flow			Internal Method
-- ⁷	1.6E-5	cm/cm/°C	
-- ⁸	1.8E-5	cm/cm/°C	
-- ⁹	5.9E-5	cm/cm/°C	
-10 to 140°C ¹⁰	5.0E-5	cm/cm/°C	
Thermal Conductivity (100°C)	0.45	W/m/K	ASTM E1225
Electrical	Nominal Value	Unit	Test Method

Surface Resistivity (0.305 mm)	8.9E+8	ohms	Internal Method
Volume Resistivity (0.305 mm)	4.2E+8	ohms·cm	Internal Method
Dielectric Constant ¹¹ (23°C, 10.0 GHz)	3.58		Internal Method
Dissipation Factor ¹² (10.0 GHz)	3.5E-3		Internal Method
Flammability	Nominal Value	Unit	Test Method
Flame Rating ¹³	V-0		UL 94

NOTE	
1.	23°C
2.	E1/105 + D24/23
3.	Maximum 0.10%
4.	After Thermal Stress
5.	< 10e-6 torr, Maximum 1.00%
6.	23°C
7.	X-axis
8.	Y-axis
9.	Z-axis
10.	Adapted
11.	C23/50
12.	C23/50
13.	C48/23/50, E24/125,

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