Arlon® 25N

Polytetrafluoroethylene

Arlon-MED

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Technical Data

Product Description

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 des ign circuits.

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

General

Material Status	• Commercial: Active		
Literature [1]	• Technical Datasheet (English)		
Availability	• Asia Pacific	• Europe	• North America
Filler / Reinforcement	• Ceramic Fiber	• Glass Fiber	
Features	• Fast Molding Cycle	• Good Dimensional Stability	
Uses	• Electrical/Electronic Applications		
Forms	• Pellets		

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density / Specific Gravity [3]	1.70	1.70 g/cm³	ASTM D792A
Water Absorption [4] (24 hr, 73°F (23°C))	0.090 %	0.090 %	Internal Method
Volatile Matter [5]	0.010 %	0.010 %	
Mechanical	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Flexural Strength (73°F (23°C))	30200 psi	208 MPa	ASTM D790A
Films	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Tensile Strength - MD [3] (Yield)	16100 psi	111 MPa	ASTM D882A
Peel Strength [6]	5.0 lbf/in	875.6 N/m	Internal Method
Thermal	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
CLTE - Flow			
-- [7]	8.3E-6 in/in/°F	1.5E-5 cm/cm/°C	Internal Method
-- [8]	2.9E-5 in/in/°F	5.2E-5 cm/cm/°C	Internal Method
Thermal Conductivity (212°F (100°C))	3.1 Btu·in/hr/ft²/°F	0.45 W/m/K	ASTM E1225
Electrical	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Surface Resistivity	4.4E+14 ohms	4.4E+14 ohms	Internal Method
Volume Resistivity	2.0E+9 ohms·cm	2.0E+9 ohms·cm	Internal Method
Dielectric Constant [9] (73°F (23°C), 10.0 GHz)	3.38	3.38	Internal Method
Dissipation Factor [9] (10.0 GHz)	2.5E-3	2.5E-3	Internal Method
Additional Information	**Nominal Value (English)**	**Nominal Value (SI)**	
Total Mass Loss [10] (257°F (125°C))	> 0.17 %	> 0.17 %	
Water Vapor - Recovered	0.020 %	0.020 %	

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Notes

[1] These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

[2] Typical properties: these are not to be construed as specifications.

[3] 23°C

[4] E1/105 + D24/23

[5] Maximum 0.10%

[6] After Thermal Stress

[7] X-axis

[8] Z-axis

[9] C23/50

[10] < 10e-6 torr, Maximum 1.00%

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Where to Buy

Supplier

Arlon-MED
Rancho Cucamonga, Rancho Cucamonga USA
Telephone: 909-987-9533
Web: http://www.arlon-med.com/index.html

Distributor

Please contact the supplier to find a distributor for Arlon® 25N

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