

Product Texts

40% Glass Reinforced, PA4T, Electro-friendly, Halogen free and free of red phosphorous

ISO 1043 PPA-GF40 FR(40)

ForTii® F12 has excellent balance of stiffness and toughness, suitable for high mechanical loaded application such as power connector or EV parts. F12 has high RTI electrical rating of 140°C at 0.75 mm and shows JEDEC Level 2 performance, enabling SMT process without deformation and low risk on blistering.

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
ISO Data			
^[C] Molding shrinkage, parallel	0.3 / *	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	0.8 / *	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	14000 / 14000	MPa	ISO 527
^[C] Stress at break	170 / 170	MPa	ISO 527
^[C] Strain at break	1.9 / 1.9	%	ISO 527
^[C] Charpy impact strength, +23°C	65 / 65	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	8 / 8	kJ/m ²	ISO 179/1eA

[C]: CAMPUS

Thermal properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Melting temperature, 10°C/min	325 / *	°C	ISO 11357-1/-3
^[C] Glass transition temperature, 10°C/min	125 / *	°C	ISO 11357-1/-2
^[C] Temp. of deflection under load, 1.80 MPa	305 / *	°C	ISO 75-1/-2
^[C] Temp. of deflection under load, 0.45 MPa	323 / *	°C	ISO 75-1/-2
^[C] Burning Behav. at 1.5 mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Yellow Card available	yes / *	-	-
^[C] Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	3.0 / *	mm	-
Yellow Card available	yes / *	-	-

[C]: CAMPUS

Electrical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	4.2 / 4.2	-	IEC 62631-2-1
^[C] Relative permittivity, 1MHz	3.9 / 3.9	-	IEC 62631-2-1
^[C] Dissipation factor, 100Hz	50 / 50	E-4	IEC 62631-2-1
^[C] Dissipation factor, 1MHz	150 / 150	E-4	IEC 62631-2-1
^[C] Volume resistivity	>1E13 / >1E13	Ohm*m	IEC 62631-3-1
^[C] Surface resistivity	* / >1E15	Ohm	IEC 62631-3-2
^[C] Electric strength	33 / 33	kV/mm	IEC 60243-1
^[C] Comparative tracking index	600 / -	-	IEC 60112

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
^[C] Water absorption	3.4 / *	%	Sim. to ISO 62
^[C] Humidity absorption	1.3 / *	%	Sim. to ISO 62
^[C] Density	1550 / -	kg/m ³	ISO 1183

[C]: CAMPUS

ForTii® F12

PPA-GF40 FR(40)

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Material specific properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Viscosity number	86 / *	cm ³ /g	ISO 307, 1157, 1628

[C]: CAMPUS

Characteristics**Processing**

Injection Molding

Special Characteristics

Flame retardant, Halogen-free, Phosphorus-free

Delivery form

Granules

Regional Availability

North America, Europe, Asia Pacific

Other text information**Injection molding**[Injection Molding Recommendations](#)[Hot runner recommendations for molding high heat performance Engineering Materials](#)[Steel recommendations for molds screws and barrels](#)[Trouble shooting guideline for injection molding](#)