

**Product Texts**

30% Glass Reinforced, PA4T, Electro-friendly, Halogen free and free of red phosphorous, Certified V-0 at 0.2mm

ISO 1043 PPA-GF30 FR(40)

ForTii F11 has an excellent balance in flow, toughness and stiffness, enabling thin walls or complicated geometries for E&E applications. F11 is all-color VDE approved, has a high RTI electrical rating of 140°C at 0.75 mm and a CTI ≥800V rating to secure thermal ageing and electrical performance.

<b>Processing/Physical Characteristics</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Molding shrinkage, parallel	<b>0.3 / *</b>	%	ISO 294-4, 2577
<sup>[C]</sup> Molding shrinkage, normal	<b>1.2 / *</b>	%	ISO 294-4, 2577

[C]: CAMPUS

<b>Mechanical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	<b>11500 / 12000</b>	MPa	ISO 527
<sup>[C]</sup> Stress at break	<b>150 / 140</b>	MPa	ISO 527
<sup>[C]</sup> Strain at break	<b>2 / 1.9</b>	%	ISO 527
<sup>[C]</sup> Charpy impact strength, +23°C	<b>50 / 50</b>	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy notched impact strength, +23°C	<b>7.5 / 7.5</b>	kJ/m <sup>2</sup>	ISO 179/1eA

[C]: CAMPUS

<b>Thermal properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Melting temperature, 10°C/min	<b>325 / *</b>	°C	ISO 11357-1/-3
<sup>[C]</sup> Glass transition temperature, 10°C/min	<b>125 / *</b>	°C	ISO 11357-1/-2
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	<b>305 / *</b>	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 0.45 MPa	<b>323 / *</b>	°C	ISO 75-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, parallel	<b>20 / *</b>	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, normal	<b>65 / *</b>	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Burning Behav. at 1.5 mm nom. thickn.	<b>V-0 / *</b>	class	IEC 60695-11-10
Thickness tested	<b>1.5 / *</b>	mm	-
Yellow Card available	<b>yes / *</b>	-	-
<sup>[C]</sup> Burning Behav. at thickness h	<b>V-0 / *</b>	class	IEC 60695-11-10
Thickness tested	<b>3.0 / *</b>	mm	-
Yellow Card available	<b>yes / *</b>	-	-
<sup>[C]</sup> Oxygen index	<b>39 / *</b>	%	ISO 4589-1/-2

[C]: CAMPUS

<b>Electrical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Relative permittivity, 100Hz	<b>4.2 / 4.2</b>	-	IEC 62631-2-1
<sup>[C]</sup> Relative permittivity, 1MHz	<b>3.9 / 3.9</b>	-	IEC 62631-2-1
<sup>[C]</sup> Dissipation factor, 100Hz	<b>64 / 64</b>	E-4	IEC 62631-2-1
<sup>[C]</sup> Dissipation factor, 1MHz	<b>176 / 176</b>	E-4	IEC 62631-2-1
<sup>[C]</sup> Volume resistivity	<b>&gt;1E13 / &gt;1E13</b>	Ohm*m	IEC 62631-3-1
<sup>[C]</sup> Surface resistivity	<b>* / &gt;1E15</b>	Ohm	IEC 62631-3-2
<sup>[C]</sup> Electric strength	<b>33 / 33</b>	kV/mm	IEC 60243-1
<sup>[C]</sup> Comparative tracking index	<b>600 / 600</b>	-	IEC 60112

[C]: CAMPUS

<b>Other properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<sup>[C]</sup> Water absorption	<b>4.1 / *</b>	%	Sim. to ISO 62
<sup>[C]</sup> Humidity absorption	<b>1.6 / *</b>	%	Sim. to ISO 62

**ForTii® F11**

PPA-GF30 FR(40)

Envalior

<sup>[C]</sup> Density	1460 / -	kg/m <sup>3</sup>	ISO 1183
<sup>[C]</sup> : CAMPUS			

Material specific properties	dry / cond	Unit	Test Standard
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**ISO Data**

<sup>[C]</sup> Viscosity number	86 / *	cm <sup>3</sup> /g	ISO 307, 1157, 1628
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<sup>[C]</sup>: 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](#)