


ForTii™ T11

PPA-GF30 FR(40)

Envalior

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® T11 has optimal toughness and is the best solution for (automotive) electrical components in harsh environments to minimize the risk of cracking and to provide design freedom and product reliability in terms of thermal shock ageing >1000 cycles. T11 passes JEDEC MSL 1 reflow performance (for specified thickness), reaches CTI ≥800V for heavy duty components, is all-color VDE approved and has electrical RTI rating of 140°C at 0,75 mm.

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Molding shrinkage, parallel	0.3 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.2 / *	%	ISO 294-4, 2577
Mechanical properties			
ISO Data			
Tensile Modulus	11500 / 12000	MPa	ISO 527
Stress at break	160 / 150	MPa	ISO 527
Strain at break	2.2 / 2.1	%	ISO 527
Charpy impact strength, +23°C	60 / -	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	8 / -	kJ/m²	ISO 179/1eA
Thermal properties			
ISO Data			
Melting temperature, 10°C/min	325 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	125 / *	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.80 MPa	305 / *	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	323 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	20 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	65 / *	E-6/K	ISO 11359-1/-2
Burning beh. at 1.5 mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	-
Yellow Card available	yes / *	-	-
Burning beh. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	3.0 / *	mm	-
Yellow Card available	yes / *	-	-
Electrical properties			
ISO Data			
Relative permittivity, 100Hz	4.2 / 4.2	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.9 / 3.9	-	IEC 62631-2-1
Dissipation factor, 100Hz	64 / 64	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	176 / 176	E-4	IEC 62631-2-1
Volume resistivity	>1E13 / >1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	* / >1E15	Ohm	IEC 62631-3-2
Electric strength	33 / 33	kV/mm	IEC 60243-1
Comparative tracking index	600 / -	-	IEC 60112
Other properties			
ISO Data			
Water absorption	4.1 / *	%	Sim. to ISO 62

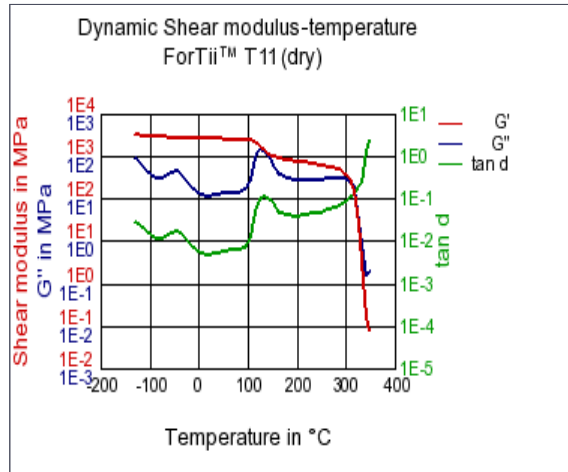
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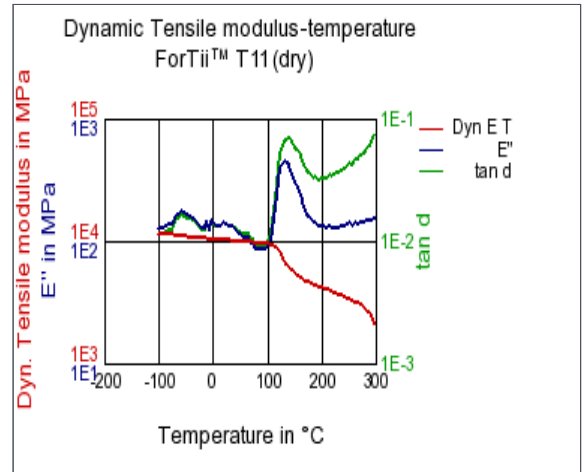
Humidity absorption	1.6 / *	%	Sim. to ISO 62
Density	1460 / -	kg/m ³	ISO 1183

Diagrams

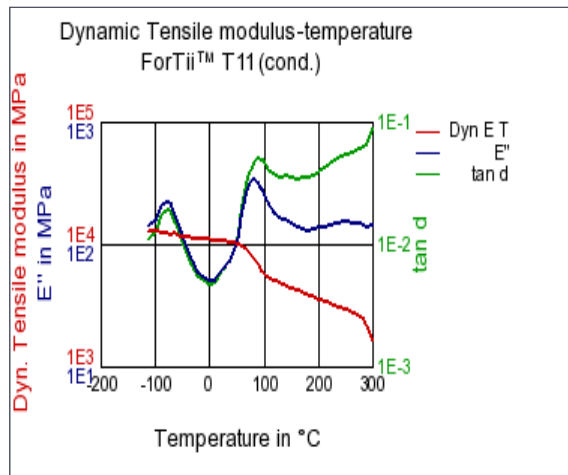
Dynamic Shear modulus-temperature



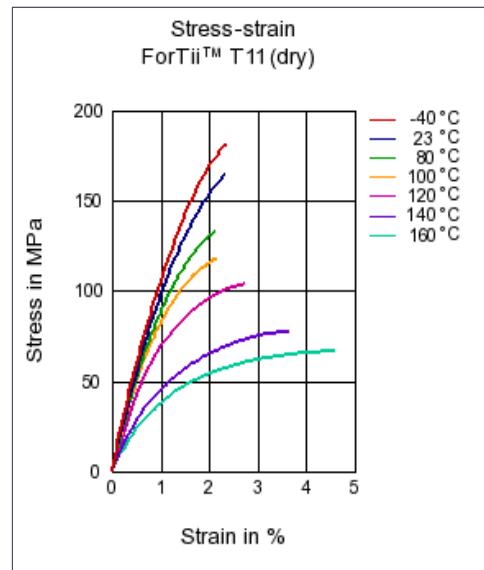
Dynamic Tensile modulus-temperature



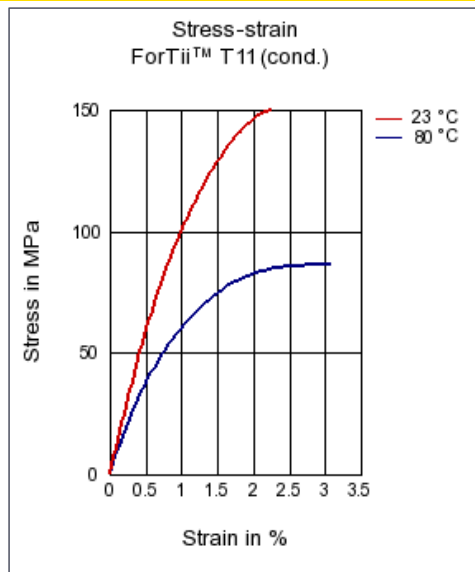
Dynamic Tensile modulus-temperature



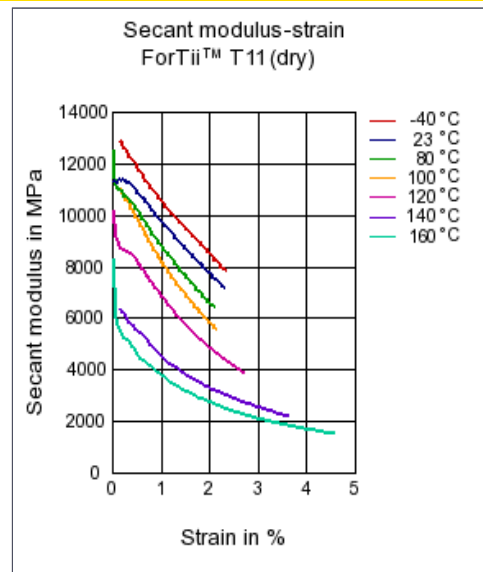
Stress-strain



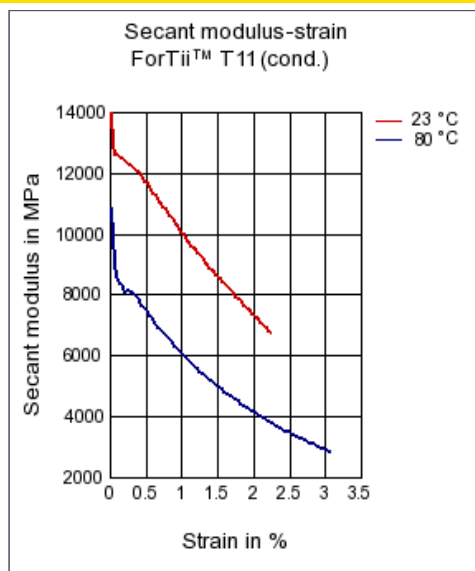
Stress-strain



Secant modulus-strain



Secant modulus-strain



Characteristics

Processing

Injection Molding

Special Characteristics

Flame retardant

Delivery form

Granules

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](#)

Chemical Media Resistance

Alcohols

☺ Methanol (23 °C)

☺ Ethanol (23 °C)

ForTii™ T11	
PPA-GF30 FR(40)	Envalior
Hydrocarbons	
☺	Toluene (23 °C)
Ketones	
☺	Acetone (23 °C)
Ethers	
☺	Diethyl ether (23 °C)
Other	
☺	Ethyl Acetate (23 °C)
☺	Water (23 °C)