TECHNICAL DATA SHEET

ForTii® T11

Envalior

PPA-GF30 FR(40)

Processing

Injection molding

Delivery Form

Granules

Special Characteristics

Flame retardant, Halogen-free, Phosphorus-free

Product Text

Product Information

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.

Processing/Physical Characteristics	Value	Unit	Standard
Molding shrinkage, parallel	0.3	%	ISO 294-4, 2577
Molding shrinkage, normal	1.2	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Standard
Tensile modulus	11500	MPa	ISO 527
Stress at break	160	MPa	ISO 527
Strain at break	2.2	%	ISO 527
Poisson's ratio	0.35		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	Value	Unit	Standard
Melting temperature, 10°C/min	325	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	125	°C	ISO 11357-1/-2

ForTii® T11

Envalior

Thermal Properties	Value	Unit	Standard
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 behav. at 1.5 mm nom. thickn.	V-0	class	IEC 60695-11-10
Thickness tested	1.5	mm	
Yellow card available	yes		
Burning behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	3	mm	
Yellow card available	yes		

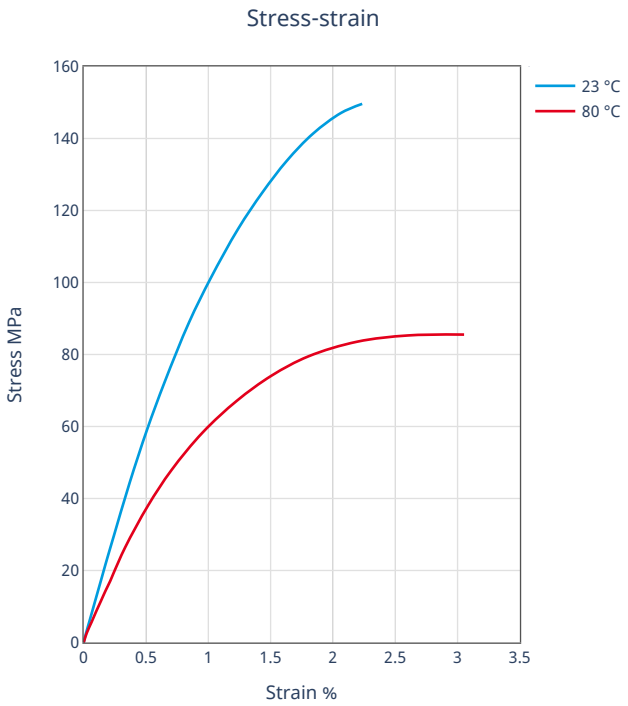
Electrical Properties	Value	Unit	Standard
Relative permittivity, 100Hz	4.2		IEC 62631-2-1
Relative permittivity, 1MHz	3.9		IEC 62631-2-1
Dissipation factor, 100Hz	64	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	176	E-4	IEC 62631-2-1
Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	33	kV/mm	IEC 60243-1
Comparative tracking index	600		IEC 60112

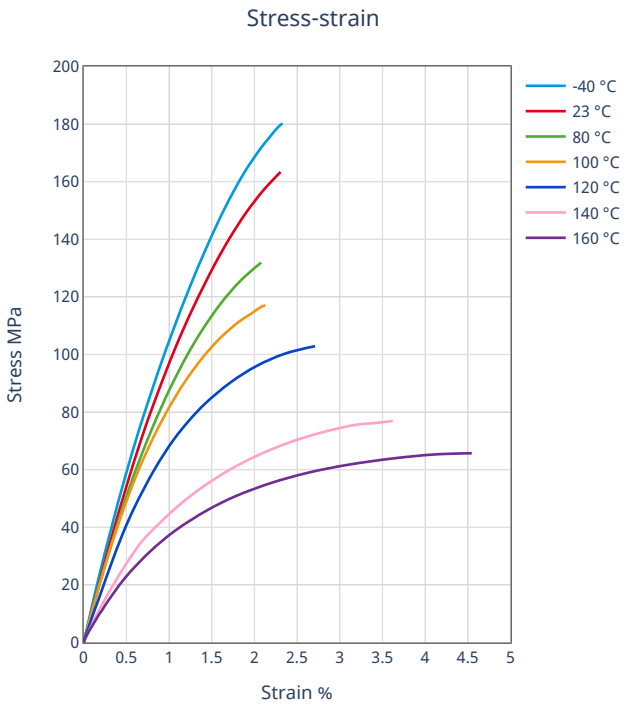
Other Properties	Value	Unit	Standard
Water absorption	4.1	%	Sim. to ISO 62
Humidity absorption	1.6	%	Sim. to ISO 62
Density	1460	kg/m³	ISO 1183

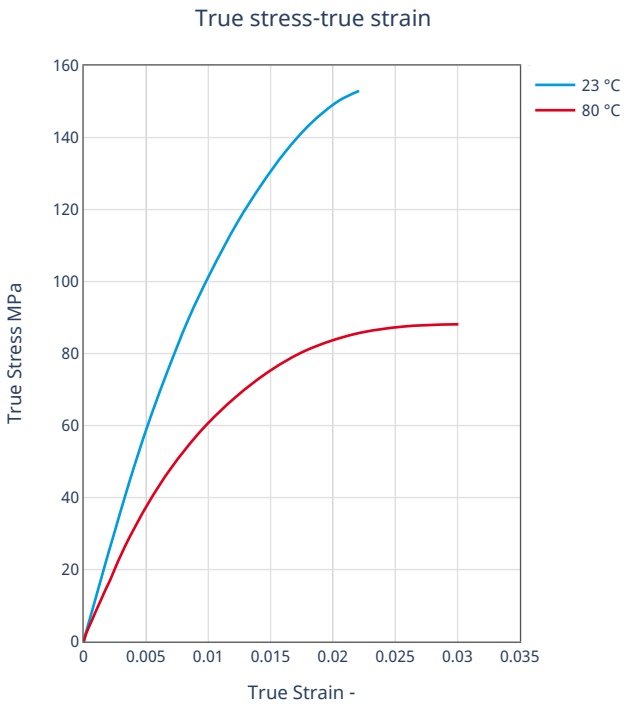
Diagrams

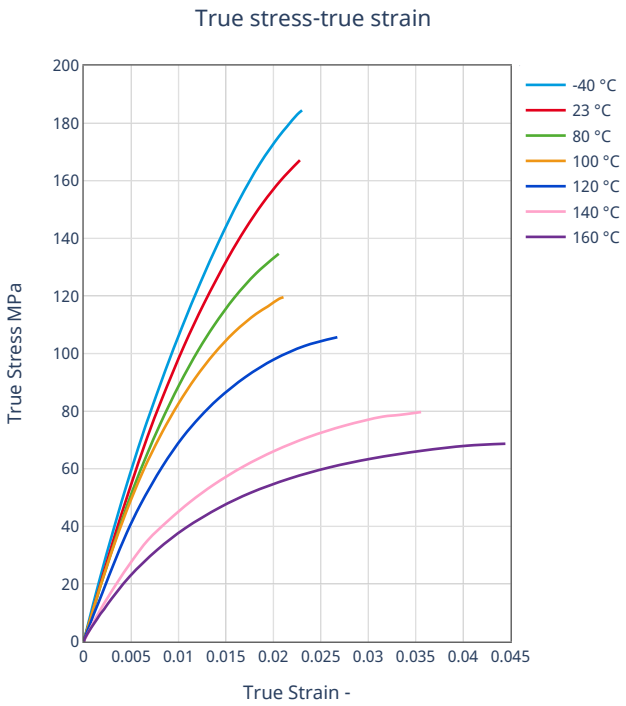
ForTii® T11

Envalior



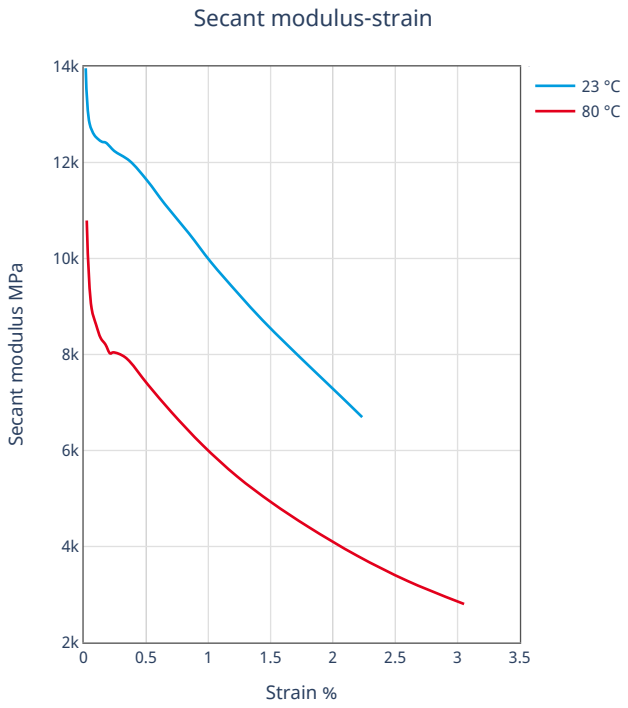


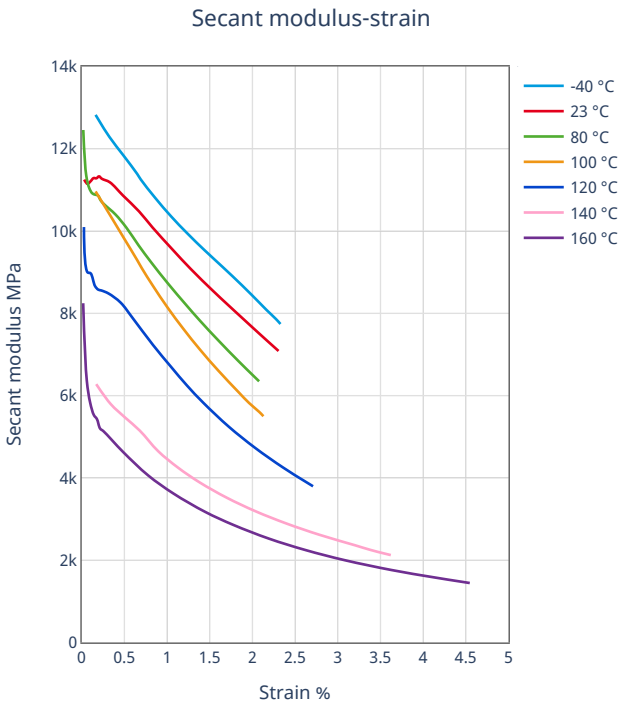


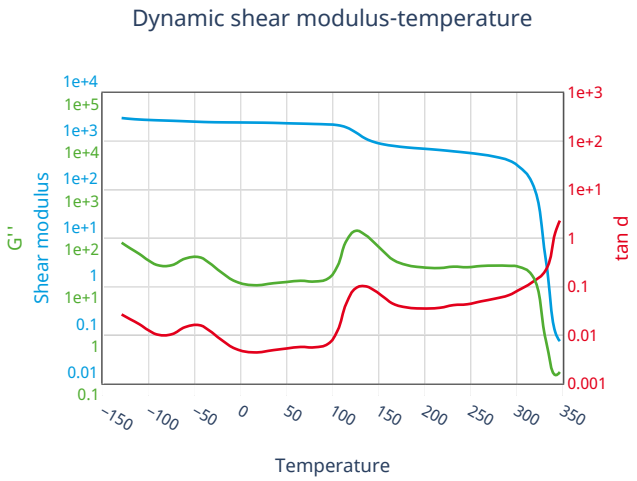


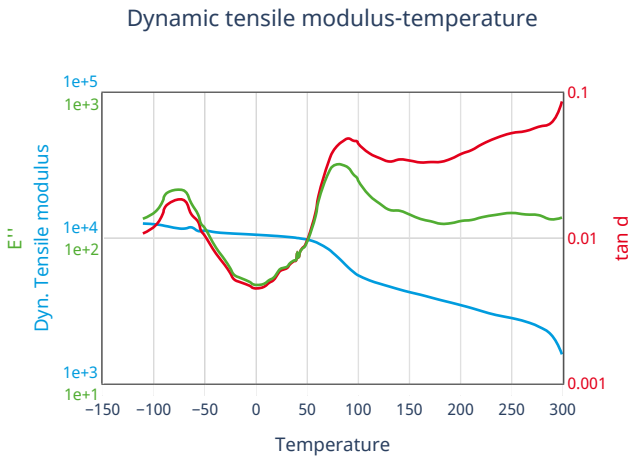
ForTii® T11

Envalior



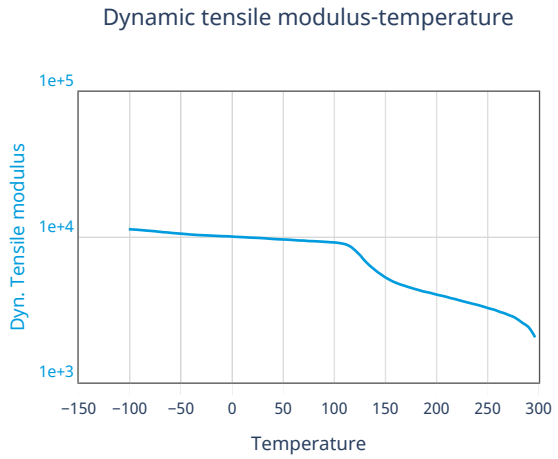






ForTii® T11

Envalior



Processing 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