

TECHNICAL DATA SHEET

ForTii® TX1

Envalior

PPA-GF30 FR(40)

Processing

Injection molding

Granules

Special Characteristics

Flame retardant, Halogen-free, Phosphorus-free

Delivery Form

Product Text

Product Information

30% Glass Reinforced, PA4T, Electro-friendly, Halogen free and free of red phosphorous, Certified V-0 at 0.35mm

ISO 1043 PPA-GF30 FR(40)

ForTii® TX1 has robust mechanical & JEDEC Level 2 performance, enabling SMT process without deformation and low risk on blistering. TX1 has stable processing behavior and is suitable for typical consumer electronics connector manufacturing such as I/O, FPC and WTB connectors.

Processing/Physical Characteristics	Value	Unit	Standard
Molding shrinkage, parallel	0.35	%	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	150	MPa	ISO 527
Strain at break	2	%	ISO 527
Poisson's ratio	0.35		ISO 527
Charpy impact strength, +23°C	47	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	7	kJ/m ²	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
Temp. of deflection under load, 1.80 MPa	305	°C	ISO 75-1/-2

ForTii® TX1

Envalior

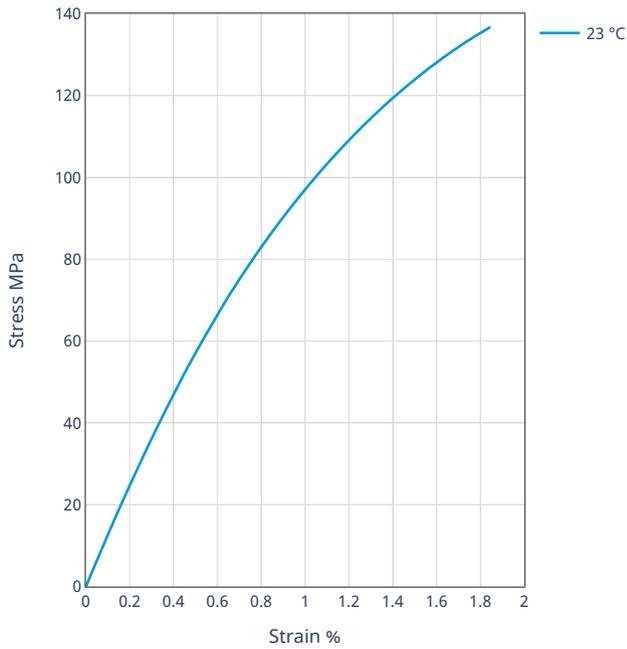
Thermal Properties	Value	Unit	Standard
Temp. of deflection under load, 0.45 MPa	323	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	20	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	65	E-6/K	ISO 11359-1/-2
Burning behav. at 1.5 mm nom. thickn.	V-0	class	IEC 60695-11-10
Thickness 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		
Oxygen index	39	%	ISO 4589-1/-2
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
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/m ³	ISO 1183
Material Specific Properties	Value	Unit	Standard
Viscosity number	86	cm ³ /g	ISO 307, 1157, 1628

Diagrams

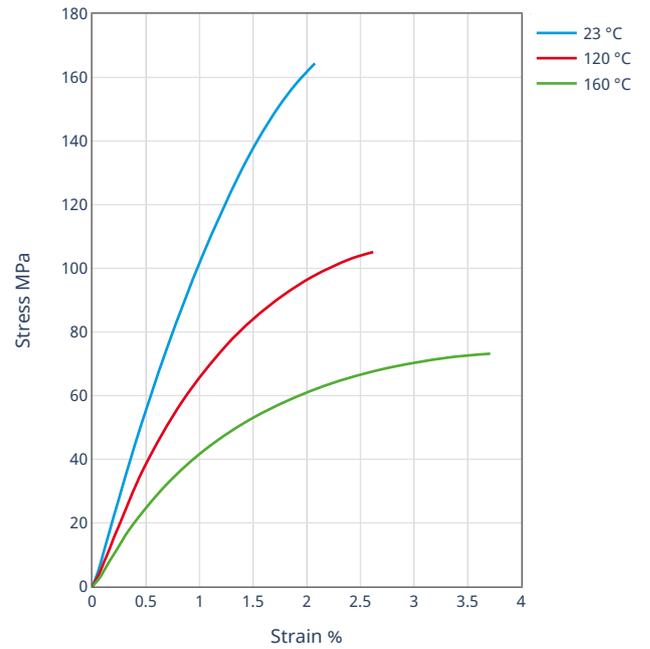
ForTii® TX1

Envalior

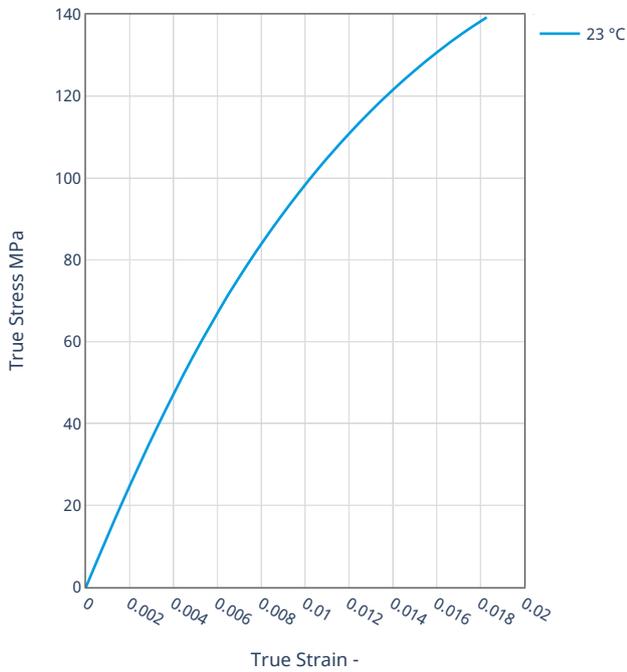
Stress-strain



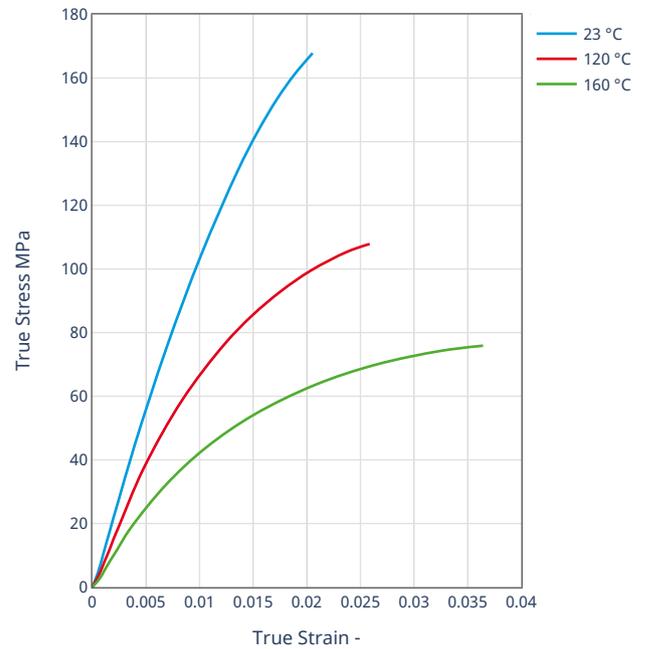
Stress-strain



True stress-true strain



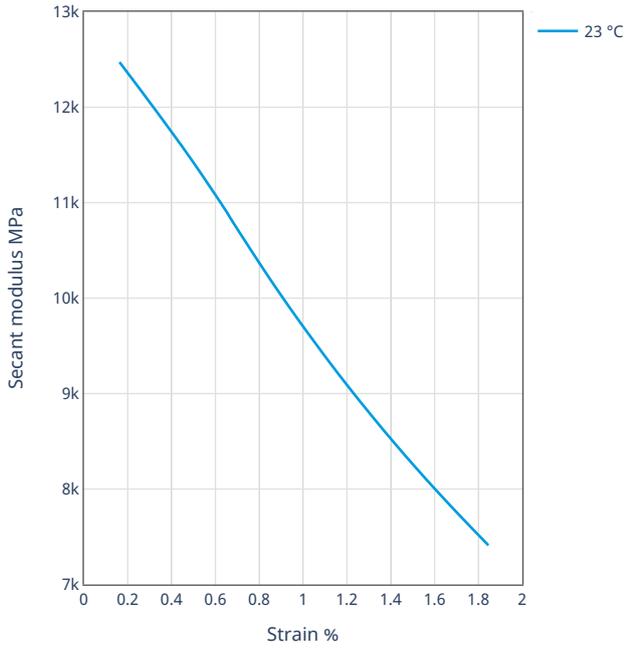
True stress-true strain



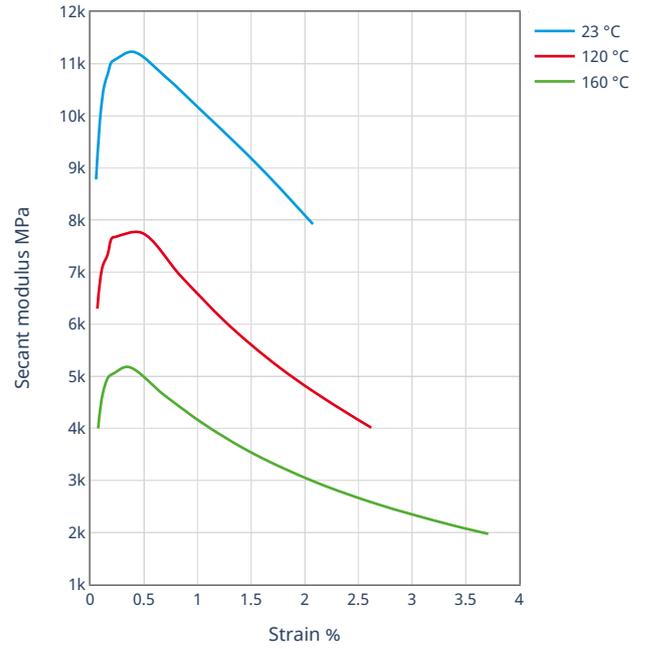
ForTii® TX1

Envalior

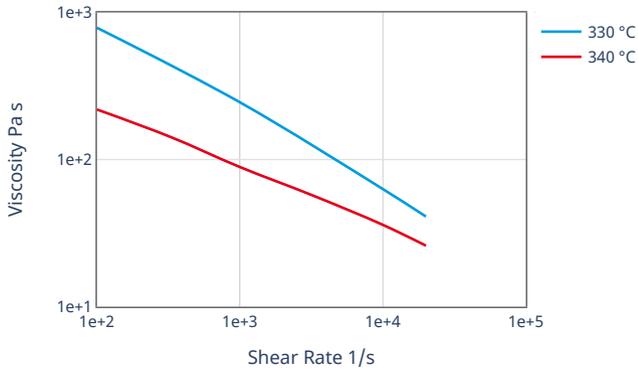
Secant modulus-strain



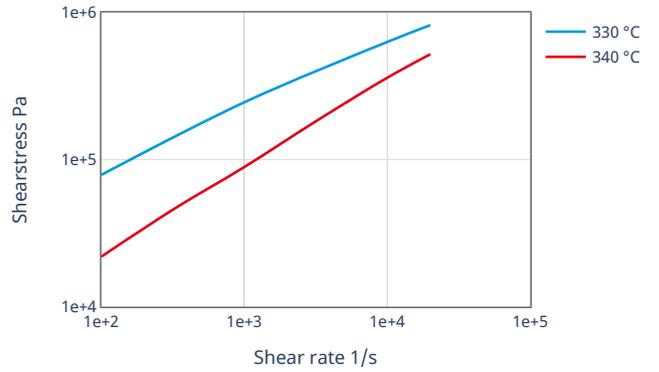
Secant modulus-strain



Viscosity-shear rate

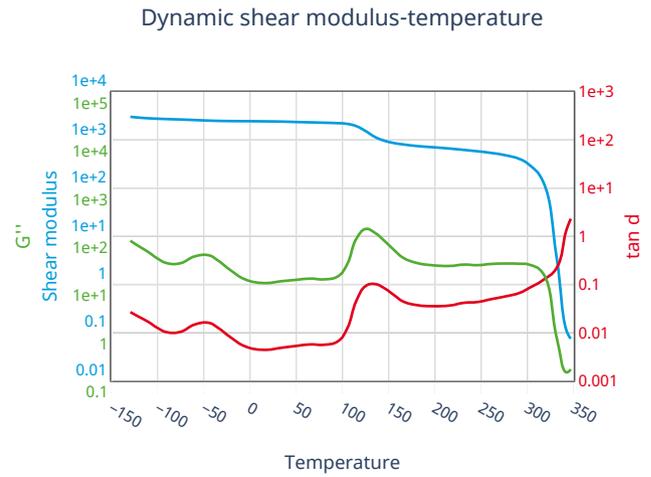
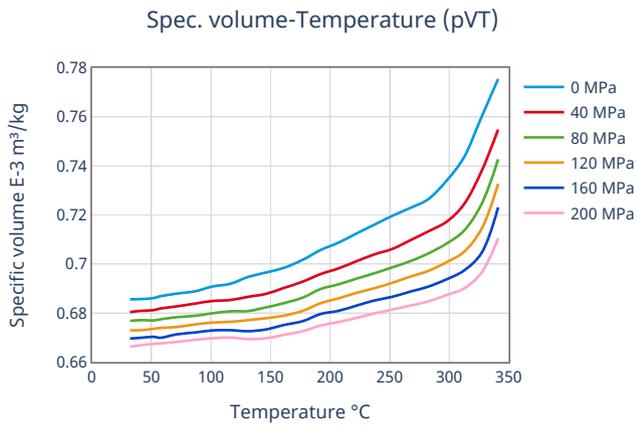


Shearstress-shear rate



ForTii® TX1

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