

ForTii® MX1

PPA-GF30

30% Glass Reinforced, PA4T, Heat Stabilized, for Automotive applications

ForTii® MX1 is a high Tg PPA that outperforms in dimensional stability at elevated temperatures due to the high heat deflection temperature (HDT). MX1 has excellent fatigue performance and good chemical resistance.

Properties	Typical Data	Unit	Test Method
Rheological properties			
	dry / cond		
Molding shrinkage (parallel)	0.4 / *	%	ISO 294-4
Molding shrinkage (normal)	1.1 / *	%	ISO 294-4
Mechanical properties			
	dry / cond		
Tensile modulus	11300 / 11600	MPa	ISO 527-1/-2
Tensile modulus (-40°C)	11600 / 11900	MPa	ISO 527-1/-2
Tensile modulus (40°C)	11000 / 10900	MPa	ISO 527-1/-2
Tensile modulus (80°C)	10500 / 6500	MPa	ISO 527-1/-2
Tensile modulus (100°C)	10000 / 5300	MPa	ISO 527-1/-2
Tensile modulus (120°C)	7800 / 4800	MPa	ISO 527-1/-2
Tensile modulus (150°C)	5100	MPa	ISO 527-1/-2
Tensile modulus (160°C)	4800	MPa	ISO 527-1/-2
Tensile modulus (180°C)	4400	MPa	ISO 527-1/-2
Tensile modulus (200°C)	4200	MPa	ISO 527-1/-2
Stress at break	190 / 170	MPa	ISO 527-1/-2
Stress at break (-40°C)	210 / 190	MPa	ISO 527-1/-2
Stress at break (40°C)	190 / 160	MPa	ISO 527-1/-2
Stress at break (80°C)	180 / 90	MPa	ISO 527-1/-2
Stress at break (100°C)	160 / 75	MPa	ISO 527-1/-2
Stress at break (120°C)	130 / -	MPa	ISO 527-1/-2



Property Data

ForTii[®] MX1

Properties	Typical Data	Unit	Test Method
Stress at break (150°C)	95	MPa	ISO 527-1/-2
Stress at break (160°C)	90	MPa	ISO 527-1/-2
Stress at break (180°C)	80	MPa	ISO 527-1/-2
Stress at break (200°C)	74	MPa	ISO 527-1/-2
Strain at break	2.1 / 1.9	%	ISO 527-1/-2
Strain at break (-40°C)	2.2 / 1.9	%	ISO 527-1/-2
Strain at break (40°C)	2.3 / 2	%	ISO 527-1/-2
Strain at break (80°C)	2.7 / 5	%	ISO 527-1/-2
Strain at break (100°C)	3.3 / 5.5	%	ISO 527-1/-2
Strain at break (120°C)	5 / 6.5	%	ISO 527-1/-2
Strain at break (150°C)	7.5	%	ISO 527-1/-2
Strain at break (160°C)	8	%	ISO 527-1/-2
Strain at break (180°C)	8	%	ISO 527-1/-2
Strain at break (200°C)	8	%	ISO 527-1/-2
Flexural modulus	10600 / 11200	MPa	ISO 178
Flexural strength	290 / 230	MPa	ISO 178
Flexural modulus (120°C)	7700	MPa	ISO 178
Flexural modulus (160°C)	4600	MPa	ISO 178
Flexural modulus (180°C)	4000	MPa	ISO 178
Flexural modulus (200°C)	3800	MPa	ISO 178
Charpy impact strength (+23°C)	55 / 45	kJ/m ²	ISO 179/1eU
Charpy impact strength (-30°C)	45 / 40	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	9 / 8	kJ/m ²	ISO 179/1eA
Charpy notched impact strength (-30°C)	9 / 8	kJ/m ²	ISO 179/1eA

Thermal properties

dry / cond

Melting temperature (10°C/min)	325 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	303 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.33	E-4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.4	E-4/°C	ASTM D696



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Properties	Typical Data	Unit	Test Method
Thermal Index 5000 hrs	176	°C	IEC 60216/ISO 527-1/-2

Electrical properties	dry / cond		
Volume resistivity	>1E13 / >1E13	Ohm*m	IEC 62631-3-1
Comparative tracking index	375 / -	V	IEC 60112
Relative permittivity (100Hz)	4.7 / 5.6	-	IEC 62631-2-1
Relative permittivity (1 MHz)	4.4 / 4.6	-	IEC 62631-2-1

Other properties	dry / cond		
Humidity absorption	2.1 / *	%	Sim. to ISO 62
Density	1450 / -	kg/m ³	ISO 1183

Tens. fatigue 8Hz, T, R=0.1 ,
dry

