

ForTii[®] MX3

PPA—GF50

50% Glass Reinforced, PA4T, Heat Stabilized, for Automotive applications

ForTii[®] MX3 is a high Tg PPA that outperforms in dimensional stability at elevated temperatures due to the high heat deflection temperature (HDT). MX3 has excellent fatigue performance and good chemical resistance.

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
RHEOLOGICAL PROPERTIES			
	DRY / COND		
Molding shrinkage (parallel)	0.35 / *	%	ISO 294-4
Molding shrinkage (normal)	0.9 / *	%	ISO 294-4
MECHANICAL PROPERTIES			
	DRY / COND		
Tensile modulus	18000 / 18300	MPa	ISO 527-1/-2
Tensile modulus (-40°C)	18300 / 18500	MPa	ISO 527-1/-2
Tensile modulus (40°C)	17600 / 17200	MPa	ISO 527-1/-2
Tensile modulus (80°C)	16800 / 10900	MPa	ISO 527-1/-2
Tensile modulus (100°C)	15700 / 8700	MPa	ISO 527-1/-2
Tensile modulus (120°C)	12400 / 7700	MPa	ISO 527-1/-2
Tensile modulus (150°C)	8200	MPa	ISO 527-1/-2
Tensile modulus (160°C)	7700	MPa	ISO 527-1/-2
Tensile modulus (180°C)	7100	MPa	ISO 527-1/-2
Tensile modulus (200°C)	6800	MPa	ISO 527-1/-2
Stress at break	260 / 240	MPa	ISO 527-1/-2
Stress at break (-40°C)	280 / 290	MPa	ISO 527-1/-2
Stress at break (40°C)	250 / 220	MPa	ISO 527-1/-2
Stress at break (80°C)	220 / 140	MPa	ISO 527-1/-2
Stress at break (100°C)	195 / 115	MPa	ISO 527-1/-2
Stress at break (120°C)	155 / 105	MPa	ISO 527-1/-2

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Stress at break (150°C)	115	MPa	ISO 527-1/-2
Stress at break (160°C)	105	MPa	ISO 527-1/-2
Stress at break (180°C)	90	MPa	ISO 527-1/-2
Stress at break (200°C)	82	MPa	ISO 527-1/-2
Strain at break	2.1 / 2	%	ISO 527-1/-2
Strain at break (-40°C)	2 / 2	%	ISO 527-1/-2
Strain at break (40°C)	2.1 / 2.1	%	ISO 527-1/-2
Strain at break (80°C)	2.3 / 4	%	ISO 527-1/-2
Strain at break (100°C)	2.6 / 4.5	%	ISO 527-1/-2
Strain at break (120°C)	3.6 / 5.5	%	ISO 527-1/-2
Strain at break (150°C)	5.7	%	ISO 527-1/-2
Strain at break (160°C)	6	%	ISO 527-1/-2
Strain at break (180°C)	6	%	ISO 527-1/-2
Strain at break (200°C)	6	%	ISO 527-1/-2
Flexural modulus	17300 / 17800	MPa	ISO 178
Flexural strength	390 / 310	MPa	ISO 178
Flexural modulus (120°C)	11700	MPa	ISO 178
Flexural modulus (160°C)	7500	MPa	ISO 178
Flexural modulus (180°C)	6400	MPa	ISO 178
Flexural modulus (200°C)	6000	MPa	ISO 178
Charpy impact strength (+23°C)	90 / 80	kJ/m ²	ISO 179/1eU
Charpy impact strength (-30°C)	75 / 65	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	12 / 10	kJ/m ²	ISO 179/1eA
Charpy notched impact strength (-30°C)	11 / 9	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)	305 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.15 / *	E-4/°C	ISO 11359-1/-2

Property Data

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Coeff. of linear therm. expansion (normal)	0.5 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (parallel)	0.27	E-4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.3	E-4/°C	ASTM D696
Relative Temperature Index – electrical	150	°C	UL746B
RTI electrical (Thickness (1) tested)	0.75	mm	UL746B
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
Electric strength	35 / 34	kV/mm	IEC 60243-1
Comparative tracking index	425 / –	V	IEC 60112
Relative permittivity (100Hz)	5.1 / 5.8	–	IEC 62631-2-1
Relative permittivity (1 MHz)	4.8 / 5	–	IEC 62631-2-1

OTHER PROPERTIES	DRY / COND		
Humidity absorption	1.5 / *	%	Sim. to ISO 62
Density	1650 / –	kg/m³	ISO 1183

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

