

ForTii® Ace MX52

PPA-GF40

40% Glass Reinforced, PA4T, Heat Stabilized, for Automotive applications

Print Date: 2019-10-22

ForTii® Ace MX52 combines excellent chemical resistance (transmission/mineral oil, battery acid, water/glycol) with high part stiffness at 100-150°C.

Properties	Typical Data	Unit	Test Method
Rheological properties	dry / cond		
Molding shrinkage (parallel)	0.35 / *	%	ISO 294-4
Molding shrinkage (normal)	1 / *	%	ISO 294-4
Mechanical properties	dry / cond		
Tensile modulus	14500 / 14500	MPa	ISO 527-1/-2
Tensile modulus (-40°C)	15000 / -	MPa	ISO 527-1/-2
Tensile modulus (40°C)	14000 / 14000	MPa	ISO 527-1/-2
Tensile modulus (80°C)	13500 / 12300	MPa	ISO 527-1/-2
Tensile modulus (100°C)	13100 / 8100	MPa	ISO 527-1/-2
Tensile modulus (120°C)	12800 / -	MPa	ISO 527-1/-2
Tensile modulus (150°C)	9500	MPa	ISO 527-1/-2
Tensile modulus (160°C)	8000	MPa	ISO 527-1/-2
Tensile modulus (180°C)	6500	MPa	ISO 527-1/-2
Tensile modulus (200°C)	5900	MPa	ISO 527-1/-2
Stress at break	220 / 220	MPa	ISO 527-1/-2
Stress at break (-40°C)	270 / -	MPa	ISO 527-1/-2
Stress at break (40°C)	210 / 200	MPa	ISO 527-1/-2
Stress at break (80°C)	190 / 140	MPa	ISO 527-1/-2
Stress at break (100°C)	180 / 110	MPa	ISO 527-1/-2
Stress at break (120°C)	165 / -	MPa	ISO 527-1/-2
Stress at break (150°C)	125	MPa	ISO 527-1/-2

Property Data (Provisional)

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Properties	Typical Data	Unit	Test Method
Stress at break (160°C)	110	MPa	ISO 527-1/-2
Stress at break (180°C)	95	MPa	ISO 527-1/-2
Stress at break (200°C)	84	MPa	ISO 527-1/-2
Strain at break	2.2 / 2.2	%	ISO 527-1/-2
Strain at break (-40°C)	2.5 / -	%	ISO 527-1/-2
Strain at break (40°C)	2.1 / 2.2	%	ISO 527-1/-2
Strain at break (80°C)	2.1 / 3.2	%	ISO 527-1/-2
Strain at break (100°C)	2.3 / 4.8	%	ISO 527-1/-2
Strain at break (120°C)	2.4 / -	%	ISO 527-1/-2
Strain at break (150°C)	3.6	%	ISO 527-1/-2
Strain at break (160°C)	4.5	%	ISO 527-1/-2
Strain at break (180°C)	5.6	%	ISO 527-1/-2
Strain at break (200°C)	6	%	ISO 527-1/-2
Charpy impact strength (+23°C)	65 / 65	kJ/m ²	ISO 179/1eU
Charpy impact strength (-30°C)	60 / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	11 / 11	kJ/m ²	ISO 179/1eA
Charpy notched impact strength (-30°C)	12 / -	kJ/m ²	ISO 179/1eA

Thermal properties

dry / cond

Melting temperature (10°C/min)	335 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	320 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.17 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	0.54 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (parallel)	0.28	E-4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.35	E-4/°C	ASTM D696

Other properties

dry / cond

Humidity absorption	1.6 / *	%	Sim. to ISO 62
Density	1550 / -	kg/m ³	ISO 1183

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

