

TORAY PPS Resin "TORELINA"

Item	Unit	Test method	TORAY PPS Resin TORELINA							
			GF40% A504-X90	GF40% A504-FG1	GF/Filler 60% A310MX04	GF/Filler 60% A360M	GF/Filler 65% A390M65	GF/Filler 70% AV70M-X01		
Physical										
Density	g/cm ³	ISO1183	1.65	1.65	1.97	1.905	1.98	1.97		
Water absorption	%	ISO62	0.02	0.02	0.02	0.02	0.02	0.02		
Mechanical										
Tensile strength	Mpa	ISO527-1,2	194	167	146	138	100	100		
Tensile strain at break	%	ISO527-1,2	1.7	1.4	0.9	0.9	0.7	0.6		
Flexural strength	MPa	ISO178	305	252	236	218	217	190		
Flexural modulus	Gpa	ISO178	15.8	15.2	21.8	18.2	19.5	21		
Charpy impact	kJ/m ²	ISO179-1	11	12	9	8.3	7	7		
Rockwell hardness	R,M scale	ISO2039-2	R122	R123	R123					
Thermal										
Temperature of deflection under load	0.45Mpa 1.8Mpa	ISO75-1,2	>260	>260	>260	>260	>260	>260		>260
Linear thermal expansion	$\times 10^{-5}/K$	ISO11359-2	2.3/3.2	2.3/3.2	1.6/2.4	1.6/2.3	1.9/2.5			HB/0.72
Flammability	class/mm	UL94	V-0/0.28	V-0/0.28	V-0/0.36	V-0/0.71	V-0/0.72			
Electrical										
Electrical strength	kV/mm	IEC60243-1	22	22	20					
Arc resistance	s	ASTM D495	127	127	180					
Relative permittivity		IEC60250	4.2	3.6	5.1					
Comparative tracking index	UL index	UL746A	4	4	3					
Volume resistivity	$\Omega \cdot m \times 10^{-14}$	IEC60093	10^{14}	10^{14}	10^{14}					
Dielectric constant		IEC60250	4.2	3.6	5.1					
Dissipation factor		IEC60250	0.002	0.002	0.002					
Moldability										
Mold shrinkage	MD TD		0.2 0.75	0.2 0.75	0.15 0.55	0.22 0.71	0.25 0.6	0.25 0.5		
Bar Flow (320°C, 93MPa, 1mmt)		Toray method	135	210	105					