

## Material Data

### PA CP612

CP612 is a copolymer of nylon 6 and nylon 12 produced by anionic polymerisation of caprolactam and laurilactam. The copolymer makeup gives the product a greater degree of material resilience, reduces moisture absorption and greatly improves impact resistance.

PROPERTY	TEST METHOD	NOTES	METRIC UNITS		IMPERIAL UNITS	
<b>GENERAL</b>						
Colour					Yellow / Natural / Others	
Density	ISO1183:1987	Test Method A	g/cm <sup>3</sup>	1.140	lb/inch <sup>3</sup>	0.041
Moisture Absorption (Equilibrium)	ISO 62:1999	50% RH, 23C	%	-	%	-
Water Absorption (24 Hours)	ISO 62:1999 (modified)	Immersion, 23C	%	0.2	%	0.2
Water Absorption (Saturation)	ISO 62:1999	Immersion, 23C	%	5.0	%	5.0
<b>MECHANICAL</b>						
Tensile strength	ISO 527-1/2:1993	Sample Type 1B, 50mm min <sup>-1</sup>	MPa	75	psi	10878
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm min <sup>-1</sup>	MPa	3700	psi	536641
Elongation at break	ISO 527-1/2:1993	Sample Type 1B, 50mm min <sup>-1</sup>	%	>30	%	>30
Compressive Strength	ISO 604:2002	Sample Type B, 5mm min <sup>-1</sup>	MPa	90	psi	13053
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm min <sup>-1</sup>	MPa	2000	psi	290076
Flexural Strength*	ISO 178:2001	1.5mm min <sup>-1</sup>	MPa	95	psi	13779
Flexural Modulus	ISO 178:2001	1.5mm min <sup>-1</sup>	MPa	2700	psi	391603
Izod Impact Strength	ISO 180:2000	Sample Type A (Notched)	KJ/m <sup>2</sup>	6.50	ft.lb/in <sup>2</sup>	3.09
Charpy Impact Strength	ISO 179-2:1999	Notched	KJ/m <sup>2</sup>	-	ft.lb/in <sup>2</sup>	-
Hardness (Shore D)	ISO 868:2003	-	-	80	-	80
Coefficient of Friction (Dynamic)	-	31.4m/min, 1.75MPa	-	0.3	-	0.3
Limiting PV	-	-	MPa/m.min	-	psi.ft/min	-
Wear Rate	-	31.4m/min, 1.75MPa	mg/km	-	-	-
K-Factor	-	31.4m/min, 1.75MPa	mm <sup>3</sup> /Nm	2.9 x 10 <sup>-5</sup>	in <sup>3</sup> .min./ft.lb.hr	1.4 x 10 <sup>-4</sup>
<b>THERMAL</b>						
Melting Temperature	-	-	°C	215	°F	427
Glass Transition Temperature (Tg)	ISO 11359-2:1999	-	°C	63	°F	145
Heat Deflection Temperature HDT/A	ISO 75	1.80MPa	°C	75	°F	167
Heat Deflection Temperature HDT/B	ISO 75	0.45MPa	°C	-	°F	-
Maximum Intermittent Service Temperature	-	-	°C	160	°F	320
Maximum Continuous Service Temperature	-	5000hrs	°C	100	°F	212
Minimum Intermittent Service Temperature	-	-	°C	-100	°F	-148
Minimum Continuous Service Temperature	-	-	°C	-40	°F	-40
Coefficient of Linear Thermal Expansion (TMA)	ISO 11359-2:1999	23°C - 55°C	°C <sup>-1</sup>	8 x 10 <sup>-5</sup>	°F <sup>-1</sup>	4.44 x 10 <sup>-5</sup>
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/m.°C	0.26	BTU in/ft.hr.°F	0.15
Flammability	IEC 60695-11-10:2003-08	-	-	HB	-	HB
<b>ELECTRICAL</b>						
Dielectric Constant	IEC 60250:1969-01	1MHz	-	3.7	-	3.7
Dielectric Constant (Low Frequency)	-	100Hz	-	4	-	4
Dissipation Factor	IEC 60250:1969-01	100Hz	Hz	-	Hz	-
Dielectric Strength	IEC 60243-1:1998-01	-	kV/mm	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	1 x 10 <sup>13</sup>	ohm.in	3.93 x 10 <sup>14</sup>
Surface Resistivity ROA	IEC 60093:1980-01	-	ohm	1 x 10 <sup>12</sup>	ohm	1 x 10 <sup>12</sup>
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600
<b>AVAILABILITY</b>						




ROD: 10 mm Ø → 500 mm Ø 

PLATE: 8 mm = → 100 mm = 

TUBE: 50 mm Ø → 1500 mm Ø 

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