

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	
GENERAL						
Colour					Yellow	
Density	ISO1183:1997	Test Method A	g/cm ³	1.140	lb/inch ³	0.05
Moisture Absorption (Equilibrium)	ISO 62:1999	50% RH, 23C	%	1.8	%	1.8
Water Absorption (24 Hours)	ISO 62:1999 (modified)	Immersion, 23C	%	0.15	%	0.15
Water Absorption (Saturation)	ISO 62:1999	Immersion, 23C	%	5.0	%	5.0
FDA Compatibility		NO				

MECHANICAL						
Tensile strength	ISO 527-1/2:1993	Sample Type 1B, 50mm min ⁻¹	MPa	74-78	psi	10732-11312
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm min ⁻¹	MPa	3400-3700	psi	493128-536639
Elongation at break	ISO 527-1/2:1993	Sample Type 1B, 50mm min ⁻¹	%	>40	%	>40
Compressive Strength	ISO 604:2002	Sample Type B, 5mm min ⁻¹	MPa	95-120	psi	13778-17404
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm min ⁻¹	MPa	2000-2200	psi	290075-319083
Flexural Strength*	ISO 178:2001	1.5mm min ⁻¹	MPa	90-100	psi	13053-14503
Flexural Modulus	ISO 178:2001	1.5mm min ⁻¹	MPa	2700-3000	psi	391601-435113
Izod Impact Strength	ISO 180:2000	Sample Type A (Notched)	KJ/m ²	6.0-7.0	ft.lb/in ²	2.86-3.33
Charpy Impact Strength	ISO 179-2:1999	Notched	KJ/m ²	-	ft.lb/in ²	-
Hardness (Shore D)	ISO 868:2003	-	-	80	-	80
Coefficient of Friction (Dynamic)	-	31.4m/min, 1.75MPa	-	0.188	-	0.19
Limiting PV	-	-	MPa/m.min	100	psi.ft/min	-
Wear Rate	-	31.4m/min, 1.75MPa	mg/km	0.11	-	-
K-Factor	-	31.4m/min, 1.75MPa	mm ³ /Nm	2.9x 10 ⁻⁵	in ³ .min./ft.lb.hr	1.4 x 10 ⁻⁴

THERMAL						
Melting Temperature	-	-	°C	216	°F	420
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 ⁻¹	8 x 10 ⁻⁵	°F ⁻¹	0.44 x 10 ⁻⁵
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

ELECTRICAL						
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	0.04	Hz	0.04
Dielectric Strength	IEC 60243-1:1998-01	-	kV/mm	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	>1 x 10 ¹³	ohm.in	3.93 x 10 ¹⁴
Surface Resistivity ROA	IEC 60093:1980-01	-	ohm	>1 x 10 ¹²	ohm	1 x 10 ¹²
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600

AVAILABILITY



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