NYLACAST OILON PA6

PROPERTY	TEST METHOD	NOTES	METRIC	UNITS	IMPERIAL	UNITS
GENERAL						
Colour	-	-	-	Green	-	Green
Density	ISO 1183:1997	Test Method A	g/cm^3	1.138	lb/in	0.041
Moisture absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	2	%	2
Water absorption @24 hours	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.2	%	0.2
Water absorption to full saturation	ISO 62:1999	Immersion @ 23°C	%	6.1	%	6.1
MECHANICAL						
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	74-78	psi	11.5k
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPA	3500-3700	psi	580k
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	<30	%	<30
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	MPa	110-120	psi	14.7k
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	MPa	2100-2500	psi	392k
Flexural Strength	ISO 178:2001	1.5mm/min	MPa	105-125	psi	15.3k
Flexural Modulus	ISO 178:2001	1.5mm/min	MPa	3300-3600	psi	478k
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	kJ/m^2	5.0-6.5	ft.lb/in^2	2.9
Dynamic Coefficient of Friction	-	31.4m/min, 1.75MPa	-	0.089	-	0.089
Limiting PV	-	-	MPa.m/s	100	psi.ft/min	2.9k
K-Factor (wear factor)	-	31.4m/min, 1.75MPa	mm^3/Nm	2.2x10^{-5}	-	1.0x10^4
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	82	Shore D	82
THERMAL						
Melting Temperature, Tg	-	-	°C	222	°F	432
Glass Transition Temperature	ISO 11359:1999	-	°C	65	°F	149
Heat Deflection Temperature, HDT/A	ISO 75	1.80MPa	°C	75	°F	167
Maximum/Minimum Continuous Service Temperatures	-	-	°C	110/-40	°F	230/-40
Maximum/Minimum Intermittent Service Temperatures	-	-	°C	170/-100	°F	338/-148
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	23-55°C	°C^{-1}	8x10^{-5}	°F^{-1}	4.4x10^{-5}
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/m°C	0.25	°F	0.15
Flammability	IEC 60695-11-10:2003-08	-	-	HB	-	HB
ELECTRICAL						
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	-	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.014	-	0.014
Dielectric Strength	IEC 60243:-1:1998-01	-	kV/m	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	Ω.m	>1x10^{13}	Ω.m	4x10^{14}
Surface Resistivity	IEC 60093:1980-01	-	Ω.m	>1x10^{12}	Ω.m	>1x10^{12}
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600
FDA Compatibility						
				YES		YES

PRODUCT AVAILABILITY

Rod	10mm-500mm DIA
Tube	50mm-1000mm OD
Plate	6mm-100mm Thickness
Custom Castings	Bespoke
Cut to size	Available upon request

NOTES

- Mechanical properties of semi-finished products are highly dependent on degree of crystallinity (due to nucleation by additives and pigments), part geometry and dimensions. The value of actual mechanical properties of products may differ from the values listed.
- In the case of Polyamides, mechanical properties change due to the absorption of moisture. The rate and extent of these changes are therefore contingent on the surrounding atmosphere, ambient temperature and humidity, and duration of exposure. Property changes due to the influence of moisture absorption are primarily limited to a region beginning at the surface of the material and extending within to a certain depth. Part wall thickness can therefore influence the proportion of the material affected. This is also the case for mechanical property changes resulting from exposure to high temperatures in which the polymer undergoes thermal ageing by oxidation.
- As such, the information stated previously is intended to serve as a guide to aid in material selection and does not guarantee specific properties or the suitability of a material for a particular application. No warranties or representations are given in respect of the foregoing information.