

Nylacast PA6C Cast Nylon 6

Category : Polymer , Thermoplastic , Nylon , Nylon 6

Material Notes:

Natural PA6 is the base to the other grades of material offered by Nylacast. It is available in Natural (off white) or Black colour. It is made by ionic polymerisation of ϵ -caprolactam under anhydrous conditions in the presence of strong acids or bases. It has a higher tensile, compressive and flexural strength than extruded or injection moulding nylon 6. This is because gravitationally cast nylon 6 does have higher molecular weight and higher crystallinity. Information provided by Nylacast Ltd.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Nylacast-PA6C-Cast-Nylon-6.php

Physical Properties	Metric	English	Comments
Density	1.14 g/cc	0.0412 lb/in ³	method A; ISO 1183:1987
Water Absorption	0.30 % @Time 86400 sec	0.30 % @Time 24.0 hour	Immersion; ISO 62:1999
Water Absorption at Saturation	7.0 %	7.0 %	Immersion; ISO 62:1999

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	82 - 84	82 - 84	ISO 868:2003
Tensile Strength, Yield	80.0 MPa	11600 psi	Type 1B, 50mm/min; ISO 527-1/2:1993
Elongation at Break	>= 20 %	>= 20 %	Type 1B, 50mm/min; ISO 527-1/2:1993
Tensile Modulus	3.60 GPa	522 ksi	Type 1B, 50mm/min; ISO 527-1/2:1993
Flexural Strength	105 MPa	15200 psi	1.5mm/min; ISO 178:2001
Flexural Modulus	3.30 GPa	479 ksi	1.5mm/min; ISO 178:2001
Compressive Strength	95.0 MPa	13800 psi	Type B, 5mm/min; ISO 604:2002
Compressive Modulus	2.70 GPa	392 ksi	Type B, 5mm/min; ISO 604:2002
Izod Impact, Notched (ISO)	5.60 kJ/m ²	2.66 ft-lb/in ²	Type A; ISO 180:2000
Coefficient of Friction, Dynamic	0.39 @Pressure 1.75 MPa	0.39 @Pressure 254 psi	31.4m/min
K (wear) Factor	500 x 10 ⁻⁸ mm ³ /N-M @Pressure 1.75 MPa	248 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr @Pressure 254 psi	31.4m/min

Thermal Properties	Metric	English	Comments
CTE, linear	80.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2:1999
	@Temperature 23.0 - 55.0 $^\circ\text{C}$	@Temperature 73.4 - 131 $^\circ\text{F}$	
Thermal Conductivity	0.260 W/m-K	1.80 BTU-in/hr-ft ² - $^\circ\text{F}$	Mean T=20 $^\circ\text{C}$; ISO 8301:1991
Melting Point	220 $^\circ\text{C}$	428 $^\circ\text{F}$	
Maximum Service Temperature, Air	170 $^\circ\text{C}$	338 $^\circ\text{F}$	Intermittent
	100 $^\circ\text{C}$	212 $^\circ\text{F}$	Continuous
	@Time 1.80e+7 sec	@Time 5000 hour	
Minimum Service Temperature, Air	-100 $^\circ\text{C}$	-148 $^\circ\text{F}$	Intermittent
	-40.0 $^\circ\text{C}$	-40.0 $^\circ\text{F}$	Continuous

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	IEC 60093:1980-01
Surface Resistance	1.00e+12 ohm	1.00e+12 ohm	IEC 60093:1980-01
Dielectric Constant	3.7	3.7	IEC 60250:1969-01
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	4.0	4.0	IEC 60250:1969-01
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	25.0 kV/mm	635 kV/in	IEC 60243-1:1998-01
Comparative Tracking Index	600 V	600 V	IEC 60112:2003-01

Descriptive Properties	Value	Comments
Color	Natural/Black/Other	
Wear Rate	0.44 mg/km	31.4m/min, 1.75MPa

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