Omnia Plastica PA 11 Rilsan B

Category : Polymer , Thermoplastic , Nylon , Nylon 11 , Nylon 11, Unreinforced

Material Notes:

The only engineering plastic of natural origin (derived from castor oil), it is a polyamide which, unlike the other nylons, does not absorb humidity. It has all the good mechanical features of polyamides: tensile stress, compressive strength, wear resistance, etc. Moisture content does not influence its shock resistance. It has very good ageing and low temperature resistance.Features:Tensile stress, compressive strength and shock resistance values stable in moist as well as dry environments Wear resistance: very good even in dusty or demanding environments.Ageing and low temperature resistance Self-lubricating; low friction coefficient.Generally for sliding applications it does not require lubricators.Colour: natural.Weak Point:Although Nylon 11 has all the excellent mechanical features of polyamides without their weakest point (hygroscopicity), its high price prevents wider usage.Application:Mechanical: thanks to the stability of its excellent mechanical features, both in moist environments and at low temperatures, it is used especially in aeronautic, marine, and transport applications, and in machinery as bushings, bearings, slide and mechanical parts.Food contact: it is physiologically inert and it is used in food processing machinery.Electrical: as it is not hygroscopic and its electrical properties are stable, it is widely used for electrical applications such as insulators.Chemical: it is resistant to solvents.Information provided by Omnia Plastica s.p.a. for semifinished products such as sheet, rod, and tube.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Omnia-Plastica-PA-11-Rilsan-B.php

Physical Properties	Metric	English	Comments
Density	1.04 g/cc	0.0376 lb/in³	ISO.1183 DIN.53479
Moisture Absorption at Equilibrium	0.90 %	0.90 %	50% relative humidity
Water Absorption at Saturation	2.0 %	2.0 %	23°C

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	83	83	dry sample; ISO2039.2
Ball Indentation Hardness	100 MPa	14500 psi	ISO2039.1 DIN.53456
Tensile Strength at Break	45.0 MPa	6530 psi	ISO.527 DIN.53455
Elongation at Break	270 %	270 %	ISO.527 DIN.53455
Tensile Modulus	1.80 GPa	261 ksi	ISO.527 DIN.53455
Compressive Strength	4.00 MPa	580 psi	1% strain over 1000 hours; ISO.899 DIN.53444
Charpy Impact Unnotched	NB	NB	7.5 J; ISO.R179 DIN.53453
Charpy Impact, Notched	2.00 J/cm²	9.52 ft-lb/in²	ISO179/3C DIN.53453
Coefficient of Friction, Dynamic	0.36	0.36	on dry ground steel; load =0.05MPa; speed =0.6 m/s

Thermal Properties	Metric	English	Comments
CTE, linear	100 µm/m-°C @Temperature 23.0 - 60.0 °C	55.6 µin/in-°F @Temperature 73.4 - 140 °F	
Thermal Conductivity	0.230 W/m-K	1.60 BTU-in/hr-ft²-°F	DIN.52612
Melting Point	183 °C	361 °F	
Maximum Service Temperature, Air	85.0 °C	185 °F	Maximum operating temperature continuously for 5000 hours based on a tensile stress of 50% at 23° C.
	120 °C	248 °F	short period, no load
Deflection Temperature at 1.8 MPa (264 psi)	55.0 °C	131 °F	ISO.75 DIN.53461
Minimum Service Temperature, Air	-50.0 °C	-58.0 °F	impact conditions and heavy loads not considered
Flammability, UL94	V-2	V-2	
Oxygen Index	22 %	22 %	ISO.4589

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	ISO.93 DIN.53482
Dielectric Constant	4.0 @Frequency 1e+6 Hz	4.0 @Frequency 1e+6 Hz	ISO.250 DIN.53483
Dielectric Strength	40.0 kV/mm	1020 kV/in	ISO.243 DIN.53481
Dissipation Factor	0.050 @Frequency 1e+6 Hz	0.050 @Frequency 1e+6 Hz	ISO.250 DIN.53483

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