

POLYLOCK NYLON ROD Type PA 66

POLYLOCK is available in a wide range of sizes & grades. Their flexibility and performance characteristics have led to Nylons replacing bronze, brass, steel, and aluminum in various mechanical applications.

Why? -Because Nylon offers the following benefits:

Approximately 1/8 the weight of bronze

1/7 the weight of cast iron

1/2 the weight of aluminum

Highly impact resistance

High heat distortion temperature

Easy to machine and abrasion resistance

Material Notes:

Nylon ROD is an extruded form of polyamide, perform rigidity, strength, wear resistance, and heat resistance to 210°F. It is commonly used in Pipe end Locking Systems. This material is available in natural color & white. Both materials are compliant with FDA, USDA, NST.

Polylock Nylon RODS type PA 66

Polylock Nylon Rods type PA 66 of sizes 6mm to 50mm Dia and length upon Customer Specification

Physical Properties	Metric	English	Comments
Density	1.15 g/cc	0.0415 lb/in ³	ASTM D792
Water Absorption	0.3 %	0.3 %	24 hour immersion; ASTM D570
Moisture Absorption at Equilibrium	0.9 %	0.9 %	Water Vapor Regained
Water Absorption at Saturation	7 %	7 %	Immersion; ASTM D570
Outgassing - Total Mass Loss	2.4 %	2.4 %	
Collected Volatile Condensable Material	0 %	0 %	

Mechanical Properties

Hardness, Rockwell M	85	85	ASTM D785
Hardness, Rockwell R	115	115	ASTM D785

Hardness, Shore D	80	80	ASTM D2240
Tensile Strength, Ultimate	79.3 MPa	11500 psi	ASTM D638
Elongation at Break	50 %	50 %	ASTM D638
Tensile Modulus	2.93 GPa	425 ksi	ASTM D638
Flexural Modulus	3.1 GPa	450 ksi	ASTM D790
Flexural Yield Strength	103 MPa	15000 psi	ASTM D790
Compressive Yield Strength	86.2 MPa	12500 psi	10% Deflection; ASTM D695
Compressive Modulus	2.9 GPa	420 ksi	ASTM D695
Machinability	10 %	10 %	QEPP 10 to 100 scale
Shear Strength	68.9 MPa	10000 psi	ASTM D732
Coefficient of Friction	0.25	0.25	Dynamic; Dry vs. Steel; PTM55007
K (wear) Factor	80	80	10^{-10} in ³ -min/lb-ft- hr; PTM55007
Limiting Pressure Velocity	0.0946 MPa-m/sec	2700 psi-ft/min	PTM55007
Izod Impact, Notched	0.32 J/cm	0.6 ft-lb/in	ASTM D256A

Electrical Properties

Surface Resistivity per Square	1e+013 ohm	1e+013 ohm	EOS/ESD S11.11
Dielectric Constant	3.6	3.6	1 MHz; ASTM D150(2)
Dielectric Strength	15.7 kV/mm	400 V/mil	Short Term; ASTM D149(2)
Dissipation Factor	0.02	0.02	1 MHz; ASTM D150(2)

Thermal Properties

CTE, linear 68°F	99 μ m/m-°C	55 μ in/in-°F	ASTM E831 (TMA)
Thermal Conductivity	0.245 W/m-K	1.7 BTU-in/hr-ft ² -°F	
Melting Point	260 °C	500 °F	ASTM D3418
Maximum Service Temperature, Air	98.9 °C	210 °F	Continuous Service Without Load
Deflection Temperature at 1.8 MPa (264 psi)	93.3 °C	200 °F	ASTM D648

Flammability, UL94

V-2

V-2

UL94

Descriptive Properties

Compliance - Canada AG	Not Compliant
Compliance - Dairy 3A	Compliant
Compliance - FDA	Compliant
Compliance - NSF	Compliant
Compliance - USDA	Compliant
Compliance - USP Class VI	Not Compliant
Service in Alcohols	Limited
Service in Aliphatic Hydrocarbons	Acceptable
Service in Aromatic Hydrocarbons	Acceptable
Service in Chlorinated Solvents	Limited
Service in Continuous Sunlight	Limited
Service in Ethers	Acceptable
Service in Inorganic Salt Solutions	Acceptable
Service in Ketones	Acceptable
Service in Steam	Limited
Service in Strong Acids	Unacceptable
Service in Strong Alkalies	Unacceptable
Service in Weak Acids	Limited
Service in Weak Alkalies	Limited