

Quadrant EPP Nylatron® 703 XL PA6, solid lubricant filled, cast (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Nylon; Nylon 6; Nylon 6, Glass Fiber/Solid Lube Filled

Material Notes: **Key Benefits:**

- No "Slip-Stick" for precise, efficient control
- Excellent mechanical strength to withstand high loads
- Very abrasion resistant
- Good thermal resistance
- Good dimensional stability

Applications:

- Wear pads
- Bearing blocks
- Wear guides
- Linear bearings and bushings

Nylatron® 703 XL sets a new standard of machined part performance for linear bearing and wear pad applications. Building on the success of Quadrant Engineering Plastic Products Nylatron® NSM, the industry's premier material for nearly 20 years, Nylatron 703 XL provides lifting equipment with a new advantage. The wear resistance of NSM with added benefit of zero "slip-stick" makes Nylatron 703 XL an ideal material for applications where precise motion control is required.

Units equipped with Nylatron 703 XL can accurately display smaller movements made possible by today's sophisticated control devices. Static and dynamic coefficients of friction that approximate each other at virtually every point over the product's useful range, make this possible.

Quadrant developed Nylatron 703 XL to meet the increasing needs of engineers in the construction and production equipment industries. Materials like Nylatron® NSM and Nylatron® GSM are still available, and are widely used in critical bearing applications. Quadrant offers a broad range of bearing and wear resistant materials that can handle aggressive thermal, wear and chemical environments.

- Broadest size range availability
- Good mechanical and electrical properties
- Ideal balance of strength and toughness
- Cast as finished parts and near net shapes (nylon 6)

Key Words: Polyamide

Physical Properties	Metric	English	Comments
Specific Gravity	1.11 g/cc	1.11 g/cc	ASTM D792
Water Absorption	0.47 %	0.47 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	7.0 %	7.0 %	Immersion; ASTM D570(2)
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	65	65	ASTM D785
Tensile Strength	62.1 MPa	9000 psi	ASTM D638
Elongation at Break	15 %	15 %	ASTM D638
Tensile Modulus	2.76 GPa	400 ksi	ASTM D638
Flexural Strength	89.6 MPa	13000 psi	ASTM D790
Flexural Modulus	2.48 GPa	360 ksi	ASTM D790
Compressive Strength	68.9 MPa	10000 psi	10% Def.; ASTM D695
Compressive Modulus	2.48 GPa	360 ksi	ASTM D695
Izod Impact, Notched	0.374 J/cm	0.700 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.14	0.14	Dry vs. Steel; QTM55007
K (wear) Factor	52.4 x 10 ⁻⁹ mm ³ /N-M	26.0 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.596 MPa-m/sec	17000 psi-ft/min	4:1 safety factor; QTM 55007
Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	>= 1.00e+12 ohm	>= 1.00e+12 ohm	EOS/ESD S11.11
Thermal Properties	Metric	English	Comments
CTE, linear	88.2 µm/m-°C @Temperature -40.0 - 149 °C	49.0 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Melting Point	216 °C	420 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	93.3 °C	200 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	93.3 °C	200 °F	ASTM D648
Flammability, UL94	HB	HB	1/8 inch (Estimated Rating)

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
Canada AG	No	No	
FDA	No	No	
NSF	No	No	
USDA	No	No	
USP Class VI	No	No	

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Unacceptable	Unacceptable	
Acids, Weak	Limited	Limited	
Alcohols	Limited	Limited	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Limited	Limited	
Chlorinated Solvents	Limited	Limited	
Conductive / Static Dissipative	Yes	Yes	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	

Descriptive Properties

Machinability	1	1-10, 1=Easier to Machine
---------------	---	---------------------------