

KEY BENEFITS

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

A New Level of Performance

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 control is required.

Why is "Zero Slip-Stick" Better?

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.

Broadest Range of Materials

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.

Learn more at www.quadrantepp.com or www.dotmar.com.au

Properties	Test Methods ISO / IEC	Units	NYLATRON 703 XL
Density	1183	g/cm ³	1.11
Water absorption:			
– after 24/96h immersion in water of 23°C (1)	62	mg	40/76
	62	%	0.61/1.16
– at saturation in air of 23°C / 50% RH	–	%	2
– at saturation in water of 23°C	–	%	6.3
Thermal Properties			
Melting temperature	–	°C	220
Thermal conductivity at 23°C	–	W/(K.m)	0.30
Coefficient of linear thermal expansion:			
– average value between 23 and 60°C	–	m/(m.K)	85 x 10 ⁻⁶
– average value between 23 and 100°C	–	m/(m.K)	100 x 10 ⁻⁶
Temperature of deflection under load:			
– method A: 1.8 MPa	75	°C	70
Max. allowable surface temperature in air:			
– for short periods (2)	–	°C	160
– continuously: for 5,000 / 20,000 h (3)	–	°C	105/90
Min. service temperature (4)	–	°C	-20
Flammability (5):			
– "Oxygen Index"	4589	%	< 20
– according to UL 94 (3 / 6 mm thickness)	–	–	HB / HB
Mechanical Properties at 23°C (dry material)			
Tension test (6):			
– tensile stress at yield (7)	527	MPa	62
– tensile strain at break (7)	527	%	10
– tensile modulus of elasticity (8)	527	MPa	2750
Compression test (9):			
– compressive stress at 1 / 2 / 5 % normal strain (8)	604	MPa	20.5/40/67
Creep test in tension (6):			
– stress to produce 1% strain in 1,000 h (S _{1,000})	899	MPa	16
Charpy impact strength – unnotched (10)	179/1eU	kJ/m ²	≥ 25
Charpy impact strength – notched	179/1eA	kJ/m ²	3
Izod impact strength – notched	180/2A	kJ/m ²	3
Ball indentation hardness (11)	2039-1	N/mm ²	120
Rockwell hardness (11)	2039-2	–	R 109 (M 59)
Electrical Properties at 23°C (dry material)			
Volume resistivity	(60093)	Ohm.cm	> 10 ¹²
Surface resistivity	(60093)	Ohm	> 10 ¹²

Physical properties (indicates values)

DATA SHEET

- (1) According to method 1 of ISO 62 and done on discs Ø 50 x 3 mm.
- (2) Only for short time exposure (a few hours) in applications where no or only a very low load is applied to the material.
- (3) Temperature resistance over a period of 5,000/20,000 hours. After these periods of time, there is a decrease in tensile strength of about 50% as compared with the original value.
The temperature values given here are thus based on the thermal-oxidative degradation which takes place and causes a reduction in properties. Note, however, that, as for all thermoplastics, the maximum allowable service temperature depends in many cases essentially on the duration and the magnitude of the mechanical stresses to which the material is subjected.
- (4) Impact strength decreasing with decreasing temperature, the minimum allowable service temperature is practically mainly determined by the extent to which the material is subjected to impact. The value here is based on unfavourable impact conditions and may consequently not be considered as being the absolute practical limit.
- (5) These estimated ratings are not intended to reflect hazards presented by the material under actual fire conditions. There are no UL-yellow cards available for NYLATRON 703 XL stock shapes.
- (6) Test specimens: Type 1 B
- (7) Test speed: 20 mm/min
- (8) Test speed: 1 mm/min
- (9) Test specimens: cylinders (Ø 12 x 30 mm)
- (10) Pendulum used: 4 J
- (11) 10 mm thick test specimens

This table is a valuable help in the choice of a material. The data listed here fall within the normal range of product properties. **However, they are not guaranteed and they should not be used to establish material specification limits nor used alone as the basis of design.**

Availability:

Plates: Thicknesses 10, 16, 20, 30, 40, 60 and 80 mm

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