

QUADRANT EPP PRODUCT DATA SHEET

TORLON® PAI 4301

May 1999

Bearing Grade Polyamide-imide (PAI + Graphite / PTFE)

The addition of graphite and PTFE provides higher wear resistance and lower coefficient of friction compared to unfilled TORLON® PAI, as well as little or no stick-slip in use. This grade excels in severe wear applications such as non-lubricated bearings, seals, bearing cages and reciprocating compressor parts.

- High maximum service temperature (250°C)
- Excellent resistance against high energy radiation
- Inherent low flammability
- Exceptional wear & frictional behaviour
- Outstanding dimensional stability (to +250°C)
- Excellent dielectric and insulating properties
- Excellent retention of mechanical strength / stiffness over a wide range of temperatures

Common applications: Bearings; Seals; Bearing cages; Reciprocating compressor parts; Thrust washers; Valve seats; Piston rings; Vanes; Wear pads.

Delivery Programme

Rod 2440mm long
 Diameter (mm): 4.76 (Min) 50.8 (Max)

Plate 305mm wide
 Lengths (mm): 305, 610, 1220
 Thickness (mm): 4.76 (Min) 25.4 (Max)

Technical Specification

Property	ISO Methods	Units	TORLON® PAI 4301
Colour	-	-	Black
Specific gravity	1183	g/cm ³	1.45
Water absorption			
Saturation in air (23°C / 50% RH)	-	%	1.90
Saturation in water (23°C)	-	%	3.50
Tensile strength* ¹	527	N/mm ²	80
Tensile modulus of elasticity* ¹	527	N/mm ²	5800
Elongation at break* ¹	527	%	5
Impact - Charpy* ¹	179/1eU	kJ/m ²	-
Impact - Charpy notched* ¹	179/1eA	kJ/m ²	4
Hardness	Rockwell Shore D	- -	M105 -
Melt Point	-	°C	T _G = 285
Max allowable service temp in air			
for short periods	-	°C	270
continuously for 20000hrs	-	°C	250
Linear thermal expansion coefficient	-	K ⁻¹ x 10 ⁻⁵	2.5
Thermal Conductivity	-	W/(K.m)	0.54
Flammability* ² (3mm thickness)	-	-	V-0
Volume Resistivity* ¹	IEC93	Ohm.cm	10 ¹⁵
Dielectric Strength* ¹	IEC243	kV/mm	-
Outside applications - UV resistance	-	-	A
Acids - Strong (pH < 3)	-	-	B/C
Alkalis - Strong (pH > 11)	-	-	B/C
Chlorinated Hydrocarbons	-	-	A
Hot Water	-	-	C

Distributor

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'A' - Acceptable service; 'B' - Limited service; 'C' - Unacceptable.

*¹ Measured on dry test specimens (where applicable)

*² Tests completed by Quadrant EPP, using UL test methods

Not all material sizes shown within the delivery programme section of this data sheet are available as standard. Please contact Quadrant Engineering Plastic Products UK for further details.

The data shown are typical values and are not intended to represent specifications. Their aim is to guide the user toward a material choice.