TORLON® 4301 PAI

Bearing & Wear Grade

DESCRIPTION

TORLON® 4301 is a general purpose bearing grade polyamide-imide (PAI) containing 12% graphite and 3% PTFE powder for reduced friction and low wear rate. It is the toughest and most commonly specified of the Torlon wear grades.

TYPICAL APPLICATIONS:

- Highly loaded bearings and bushings
- Ball bearing retainers/spacers
- Thrust washers and piston rings
- Wear pads and sliding surfaces

Material Notes: *Torlon 4301 contains 12% graphite powder and 3% PTFE. The wear rate and limiting PV for machined parts can be improved by post-curing parts after machining to achieve optimum wear resistance on the part's outer surface.*

EXTRUDED SHAPES PROPERTIES

PHYSICAL PROPERTIES	METRIC	IMPERIAL	METHODS
Specific Gravity	1.45 g/cc	0.053 lb/in^3	ASTM D792
Water Absorption	0.4%	0.4%	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	1.5%	1.5%	Immersion; ASTM D570(2)
MECHANICAL PROPERTIES[1]			
Hardness, Rockwell M		M106	ASTM D785
Hardness, Rockwell		E70	ASTM D785
Hardness, Shore D		90	ASTM D2240
Tensile Strength, Ultimate	138 MPa	15,000 PSI	ASTM D638
Elongation at Break	5%	5%	ASTM D638
Tensile Modulus	6,200 MPa	900,000 PSI	ASTM D638
Flexural Modulus	5,520 MPa	800,000 PSI	ASTM D790
Flexural Yield Strength	159 MPa	23,000 PSI	ASTM D790
Compressive Strength	152 MPa	22,000 PSI	10% Def.; ASTM D695
Compressive Modulus	6,552 MPa	950,000 PSI	ASTM D695
Izod Impact (notched)	42 J/m	0.8 ft-lbs/in.	ASTM D256 Type A
THERMAL PROPERTIES			
Glass Transition Temp./T_g	275° C	527° F	ASTM D3418
Heat Deflection Temperature (264 PSI)	278° C	532° F	ASTM TMA
Coefficient of Linear Thermal Expansion	2.5 x 10^{-5} C^{-1}	1.4 x 10^{-5} F^{-1}	E831 TMA

[1]The mechanical properties of extruded shapes may differ from the values published by resin producers. Published resin data is always generated from test specimens injection molded under optimum conditions. Drake's extruded shape values are generated using specimens machined from actual shapes and may reflect surface imperfections from machining, enhanced crystallinity as a result of processing, and fiber alignment inherent in all reinforced plastic shapes, regardless of process. For additional information on the effects of fiber alignment, see Drake Fiber Orientation Diagram, available on the Resource page of our website.