



Product Datasheet

Torlon® 4645

Bearing and Wear Grade for Lubricated Service, Extruded

Torlon 4645 is formulated with PTFE and carbon fiber to provide outstanding wear resistance in lubricated wear applications. Its wear rate and limiting PV are best among the Torlon grades. Potential applications include:

- Thrust washers
- Transmission seal rings
- Sliding vanes
- Engine bushings

Material Notes: *The wear rate and limiting PV for machined parts can be improved by recurring parts after machining to fully cross link the outer surfaces*

Physical Properties	Metric	English	Methods
Specific Gravity	1.56 g/cc	.056 lb/in ³	ASTM D792
Water Absorption	0.2%	0.2 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	1.5%	1.5 %	Immersion; ASTM D570(2)

Mechanical Properties*

Hardness, Rockwell M		M106	ASTM D785
Hardness, Rockwell		E62	ASTM D785
Hardness, Shore D		84	ASTM D2240
Tensile Strength, Ultimate	83 MPa	17,000 psi	ASTM D638
Elongation at Break	2 %	2 %	ASTM D638
Tensile Modulus	5520 MPa	1,200,000 psi	ASTM D638
Flexural Modulus	5520 MPa	1,100,000 psi	ASTM D790
Flexural Yield Strength	105 MPa	15,000 psi	ASTM D790
Compressive Strength	125 MPa	21,000 psi	10% Def.; ASTM D695
Compressive Modulus	5172 MPa	750,000 psi	ASTM D695
Izod Impact (notched)	38 J/M	0.7	ASTM D256 Type A

Thermal Properties

Melt Point/T _g	275 °C	527°F	ASTM D3418
Heat Deflection Temp (264 psi)	278°C	532°F	ASTM TMA
Coefficient of Linear Thermal Expansion	1.4 x 10 ⁻⁵ C ⁻¹	.8 x 10 ⁻⁵ F ⁻¹	E831 TMA

*The mechanical properties of extruded shapes may differ from the values published by resin producers. Published resin data is always generated off injection molded test specimens run under near perfect conditions. Drake's extruded shape values are generated using specimens machined from actual shapes and may reflect surface imperfections from machining, enhanced crystallinity resulting from 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.