



Torlon® 4XCF Material Data Sheet

(aka Duratron® PAI T7130 - Extruded)

PAI (Polyamide-imide), 30% Graphite Fiber Reinforced, Extruded

- Maintains strength and stiffness to 500°F (260°C)
- Minimal expansion rate to 500°F (260°C)
- Excellent wear resistance in bearing grades
- Able to endure harsh thermal, chemical and stress conditions

Physical Properties	Metric	English	Comments
Specific Gravity	1.47 g/cc	1.47 g/cc	ASTM D792
Water Absorption	0.30 %	0.30 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	1.5 %	1.5 %	Immersion; ASTM D570(2)
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell E	91	91	ASTM D785
Tensile Strength	152 MPa	22000 psi	ASTM D638
Elongation at Break	2.5 %	2.5 %	ASTM D638
Tensile Modulus	8.27 GPa	1200 ksi	ASTM D638
Compressive Strength	255 MPa	37000 psi	10% Def.; ASTM D695
Compressive Modulus	6.89 GPa	1000 ksi	ASTM D695
Izod Impact, Notched	0.481 J/cm	0.900 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.30	0.30	Dry vs. Steel; QTM55007
K (wear) Factor	151 x 10 ⁻⁸ mm ³ /N-M	75.0 x 10 ⁻¹⁰ in ³ /min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.490 MPa-m/sec	14000 psi-ft/min	4:1 safety factor; QTM 55007
Thermal Properties	Metric	English	Comments
CTE, linear	9.00 µm/m-°C @Temperature -40.0 - 149 °C	5.00 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Thermal Conductivity	0.519 W/m-K	3.60 BTU-in/hr-ft ² -°F	ASTM F433
Maximum Service Temperature, Air	260 °C	500 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	282 °C	540 °F	ASTM D648
Glass Transition Temp, Tg	275 °C	527 °F	ASTM D3418
Flammability, UL94	V-0	V-0	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)	Limited	Limited	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Limited	Limited	
Chlorinated Solvents	Acceptable	Acceptable	
Conductive / Static Dissipative	No	No	
Continuous Sunlight	Acceptable	Acceptable	
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	8	1-10, 1=Easier to Machine
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Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error.



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