

Quadrant EPP Duratron® PAI T7130 (Ext), Polyamide-imide, 30% carbon fiber reinforced, extruded (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Polyamide-imide (PAI); Polyamide-Imide, Graphite Filled

Material Notes: Data provided by Quadrant Engineering Plastic Products.

Formerly Torlon® 4XCF.

- 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; QTM 55007
Coefficient of Friction, Static	0.30	0.30	QTM 55007
K (wear) Factor	151 x 10 ⁻⁹ 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
Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	<= 1e+13 ohm	<= 1e+13 ohm	EOS/ESD S11.11
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
---------------	---	---------------------------