

Quadrant EPP Duratron® PAI T4203 PAI, unfilled, extruded (ISO Data)
Categories: Polymer; Thermoplastic; Polyamide-imide (PAI); Polyamide-Imide, Extruded

Material Notes: Duratron T4203 PAI offers the best toughness and impact strength of all Duratron PAI grades. This extruded Duratron PAI grade is very popular for precision parts in high-tech equipment. In addition, its good electrical insulating ability provides numerous possibilities in the field of electrical components.

- Very high maximum allowable service temperature in air (250°C continuously)
- Excellent retention of mechanical strength, stiffness and creep resistance over a wide temperature range
- Superb dimensional stability up to 260°C
- Excellent wear & frictional behaviour (particularly Duratron T4301 & T4501 PAI)
- Very good UV-resistance
- Exceptional resistance against high energy radiation (gamma- and X-rays)
- Inherent low flammability

Physical Properties	Metric	English	Comments
Density	1.41 g/cc	0.0509 lb/in ³	ISO 1183-1
Moisture Absorption at Equilibrium	2.5 %	2.5 %	50% RH
Water Absorption at Saturation	4.4 %	4.4 %	
Outgassing - Total Mass Loss	1.9 %	1.9 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell E	80	80	ISO 2039-2
Hardness, Shore D	88	88	
Ball Indentation Hardness	200 MPa	29000 psi	ISO 2039-1
Tensile Strength	150 MPa	21800 psi	at Yield; ISO 527-1/-2
Elongation at Break	20 %	20 %	ISO 527-1/-2
Elongation at Yield	9.0 %	9.0 %	ISO 527-1/-2
Tensile Modulus	4.20 GPa	609 ksi	ISO 527-1/-2
Flexural Strength	178 MPa	25800 psi	
Compressive Strength	34.0 MPa @Strain 1 %	4930 psi @Strain 1 %	ISO 604
	67.0 MPa @Strain 2 %	9720 psi @Strain 2 %	ISO 604
	135 MPa @Strain 5 %	19600 psi @Strain 5 %	ISO 604
K Factor (ISO)	5.0 µm/km	5.0 µm/km	
Charpy Impact Unnotched	NB	NB	ISO 179-1/1eU
Charpy Impact, Notched	1.50 J/cm ²	7.14 ft-lb/in ²	ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.35 - 0.60	0.35 - 0.60	
Limiting Pressure Velocity	0.200 MPa-m/sec	5710 psi-ft/min	at 1 m/s unlubricated
	0.320 MPa-m/sec	9140 psi-ft/min	at 0.1 m/s unlubricated

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.0e+14 ohm-cm	>= 1.0e+14 ohm-cm	IEC 60093
Surface Resistivity per Square	>= 1.0e+13 ohm	>= 1.0e+13 ohm	IEC 60093
Dielectric Constant	4.2 @Frequency >=100000 Hz	4.2 @Frequency >=100000 Hz	IEC 60250
Dielectric Strength	24.0 kV/mm	610 kV/in	
Dissipation Factor	0.026 @Frequency 100000 Hz	0.026 @Frequency 100000 Hz	IEC 60250
Comparative Tracking Index	175 V	175 V	IEC 60112

Thermal Properties	Metric	English	Comments
CTE, linear	40.0 µm/m-°C @Temperature 23.0 - 100 °C	22.2 µin/in-°F @Temperature 73.4 - 212 °F	
Thermal Conductivity	0.260 W/m-K	1.80 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	250 °C	482 °F	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	280 °C	536 °F	ISO 75-1/-2
Glass Transition Temp, Tg	280 °C	536 °F	DSC, 20°C/min.; ISO 11357-1/-2
Flammability, UL94	V-0	V-0	
Oxygen Index	45 %	45 %	ISO 4589-1/-2

Compliance Properties	Metric	English	Comments
2A Deion	No	No	

GR-Data	No	No
European Food 1935/2004	No	No
FDA	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	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	