

Mitsubishi Chemical Advanced Materials Duratron® PAI T5530 Compression Molded Glass Reinforced Polyamide-imide (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Polyamide-imide (PAI); Polyamide-Imide, Glass Filled

Material Notes: Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	1.61 g/cc	1.61 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	85	85	ASTM D785
Hardness, Rockwell M	125	125	ASTM D785
Hardness, Shore D	90	90	ASTM D2240
Tensile Strength	79.3 MPa	11500 psi	ASTM D638
Tensile Strength at 150°C (300°F)	63.4 MPa	9200 psi	ASTM D638
Tensile Strength at 65°C (150°F)	72.4 MPa	10500 psi	ASTM D638
Elongation at Break	3.0 %	3.0 %	ASTM D638
Tensile Modulus	6.21 GPa	900 ksi	ASTM D638
Flexural Strength	138 MPa	20000 psi	ASTM D790
Flexural Modulus	6.21 GPa	900 ksi	ASTM D790
Compressive Strength	186 MPa	27000 psi	10% Def.; ASTM D695
Compressive Modulus	4.14 GPa	600 ksi	ASTM D695
Izod Impact, Notched	0.374 J/cm	0.700 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.20	0.20	Dry vs. Steel; QTM55007
Limiting Pressure Velocity	0.701 MPa-m/sec	20000 psi-ft/min	4:1 safety factor; QTM 55007

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	>= 1.00e+13 ohm	>= 1.00e+13 ohm	EOS/ESD S11.11
Dielectric Constant	6.3 @Frequency 1e+6 Hz	6.3 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	27.6 kV/mm	700 kV/in	Short Term; ASTM D149
Dissipation Factor	0.050 @Frequency 1e+6 Hz	0.050 @Frequency 1e+6 Hz	ASTM D150

Thermal Properties	Metric	English	Comments
CTE, linear	46.8 µm/m-°C @Temperature -40.0 - 149 °C	26.0 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Thermal Conductivity	0.360 W/m-K	2.50 BTU-in/hr-ft²-°F	ASTM F433
Maximum Service Temperature, Air	260 °C	500 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	271 °C	520 °F	ASTM D648
Glass Transition Temp, Tg	275 °C	527 °F	ASTM D3418
Flammability, UL94	V-0 @Thickness 3.17 mm	V-0 @Thickness 0.125 in	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	Limited	Limited	

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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