

Unitika P-5001 Engineering Plastic

Category : Polymer , Thermoplastic , Polyarylate

Material Notes:

P series resins are resins succeeding the characteristics of the neat polymer, U100, and improved in flowability and optical properties. Among many super engineering plastics, the resins are few transparent polymer alloys that have heat resistance. The heat stable P-series resins have variations different in heat resistance in the range from 150 to 175°C. There are few transparent heat resistant resins among super engineering plastics, and thus P series resins are valuable. The resins have favorable weather resistance, and in particular, the P1001 resin is approved by SAE Standard (J576 and J578) and FMVSS Standard (108). Making the most of these characteristics, the resins may be used, for example, as the lenses for automobile lamps. High flow type resins, P1001A, and P3001S, are also available for thin molding products. Characteristics: Transparent, heat resistant, deflection temperature under load: 150 to 175°C (under a great load of 1.8 MPa) High weather resistance High creep resistant High dimensional stability High impact strength Information provided by Unitika Ltd.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Unitika-P-5001-Engineering-Plastic.php

Physical Properties	Metric	English	Comments
Density	1.21 g/cc	0.0437 lb/in ³	ASTM D792
Water Absorption	0.25 % @Thickness 3.17 mm, Time 86400 sec	0.25 % @Thickness 0.125 in, Time 24.0 hour	ASTM D570
Linear Mold Shrinkage, Flow	0.0080 cm/cm @Thickness 3.00 mm	0.0080 in/in @Thickness 0.118 in	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ASTM D785
Tensile Strength at Break	65.0 MPa	9430 psi	ASTM D638
Elongation at Break	80 %	80 %	ASTM D638
Flexural Strength	86.0 MPa	12500 psi	ASTM D790
Flexural Modulus	2.20 GPa	319 ksi	ASTM D790
Izod Impact, Notched	4.51 J/cm @Thickness 3.17 mm	8.45 ft-lb/in @Thickness 0.125 in	ASTM D256

Thermal Properties	Metric	English	Comments
CTE, linear	63.0 µm/m-°C	35.0 µin/in-°F	ASTM D696
Deflection Temperature at 1.8 MPa (264 psi)	150 °C	302 °F	ASTM D648

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+14 ohm-cm	2.00e+14 ohm-cm	ASTM D257
Dielectric Constant	3.0 @Frequency 1.00e+6 Hz	3.0 @Frequency 1.00e+6 Hz	ASTM D150
Dielectric Strength	30.0 kV/mm	762 kV/in	ASTM D149
Dissipation Factor	0.010 @Frequency 1.00e+6 Hz	0.010 @Frequency 1.00e+6 Hz	ASTM D150
Arc Resistance	125 sec	125 sec	ASTM D495

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	270 - 290 °C	518 - 554 °F	
Middle Barrel Temperature	300 - 320 °C	572 - 608 °F	
Front Barrel Temperature	310 - 330 °C	590 - 626 °F	
Nozzle Temperature	310 - 330 °C	590 - 626 °F	
Mold Temperature	100 - 120 °C	212 - 248 °F	actual surface temp
Drying Temperature	140 °C	284 °F	
Dry Time	6.00 - 24.0 hour	6.00 - 24.0 hour	
Back Pressure	0.490 - 1.47 MPa	71.1 - 213 psi	gage pressure

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