U-polymer P-5001

Polyarylate

UNITIKA Plastics Division

Message:

P series resins are resins succeeding the characteristics of the neat polymer, U-100, 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 P- 1001 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, P-1001A, and P-3001S, are also available for thin molding products.

General Information			
UL YellowCard	E47924-239921	E47924-239923	
Additive	Heat Stabilizer		
Features	Amorphous		
	Good Creep Resistance		
	Good Dimensional Stability		
	Good Flow		
	Good Impact Resistance		
	Good Weather Resistance		
	Heat Stabilized		
	High Heat Resistance		
	Opticals		
Uses	Automotive Applications		
Appearance	Clear/Transparent		
Forms	Pellets		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity	1.21	g/cm³	ASTM D792
Molding Shrinkage - Flow (3.00 mm)	0.80	%	ASTM D955
Water Absorption (24 hr, 3.18 mm)	0.25	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (R-Scale)	120		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength	65.0	MPa	ASTM D638
Tensile Elongation (Break)	80	%	ASTM D638
Flexural Modulus	2200	MPa	ASTM D790
Flexural Strength	86.0	MPa	ASTM D790
Compressive Strength	76.0	MPa	ASTM D695
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (23°C, 3.18 mm)	450	J/m	ASTM D256
Thermal	**Nominal Value**	**Unit**	**Test Method**

Deflection Temperature Under Load (1.8 MPa, Unannealed)	150	°C	ASTM D648
CLTE - Flow	6.3E-5	cm/cm/°C	ASTM D696
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity	2.0E+16	ohms·cm	ASTM D257
Dielectric Strength	30	kV/mm	ASTM D149
Dielectric Constant (1 MHz)	3.00		ASTM D150
Dissipation Factor (1 MHz)	0.010		ASTM D150
Arc Resistance	125	sec	ASTM D495
Optical	**Nominal Value**	**Unit**	**Test Method**
Transmittance (3000 µm)	88.0	%	ASTM D1003
Injection	**Nominal Value**	**Unit**	
Drying Temperature	120 to 140	°C	
Drying Time	6.0 to 8.0	hr	
Rear Temperature	280	°C	
Middle Temperature	310	°C	
Front Temperature	320	°C	
Nozzle Temperature	320	°C	
Mold Temperature	100	°C	
Injection Pressure	118	MPa	
Back Pressure	0.981	MPa	

Recommended distributors for this material

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