U-polymer P-3001

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	E47924-239923
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
Processing Method	Thermoforming

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)	122		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength	69.0	MPa	ASTM D638
Tensile Elongation (Break)	80	%	ASTM D638
Flexural Modulus	2100	MPa	ASTM D790
Flexural Strength	83.0	MPa	ASTM D790
Compressive Strength	79.0	MPa	ASTM D695
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (23°C, 3.18 mm)	350	J/m	ASTM D256

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	160	°C	ASTM D648
CLTE - Flow	6.2E-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	300	°C	
Middle Temperature	330	°C	
Front Temperature	340	°C	
Nozzle Temperature	340	°C	
Mold Temperature	120	°C	
Injection Pressure	137	MPa	
Back Pressure	0.981	MPa	

Recommended distributors for this material

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