



versalis

Technical Data Sheet

**EDISTIR**®

Polystyrene

**R 321P**

Medium impact polystyrene combining easy flow and high stiffness.

For injection moulding of parts with low thickness and high rigidity.

Designation: Thermoplastics ISO 2897-PS-I,M,083-12-04-30

### Applications

Typical uses are toys, stationery, small containers for packaging, refrigerator components, point of sales, household wares, disposable razors, technical items.

### Typical processing data

- Injection moulding:
- predrying normally not required
  - melt temperature 200-250°C
  - mould temperature 20-60°C

### General information

R 321P is certified UL94 HB "all colors" at 1.5 mm (UL file E83071).

This grade in its natural version complies by composition with the requirements set by the main Regulations for plastic materials intended for food contact (including Commission Regulation (EU) No 10/2011 and subsequent amendments).

Properties	Test conditions	Test methods	Units	Values
<b>General</b>				
Density		ISO 1183	g/cm <sup>3</sup>	1.04
Bulk density		ISO 60	g/cm <sup>3</sup>	0.65
Water absorption	24 h - 23°C	ISO 62	%	<0.1
<b>Rheological</b>				
Melt flow rate	200°C - 5 kg	ISO 1133	g/10 min	15
<b>Mechanical</b>				
Tensile stress at yield	50 mm/min	ISO 527	MPa	24
Tensile stress at break	50 mm/min	ISO 527	MPa	19
Tensile strain at break	50 mm/min	ISO 527	%	40
Tensile modulus	1 mm/min	ISO 527	MPa	2400
Flexural strength	2 mm/min	ISO 178	MPa	45
Izod impact strength, notched	+23°C - thickness 3.2 mm	ISO 180/4A	J/m	68
	+23°C - thickness 4 mm	ISO 180/1A	kJ/m <sup>2</sup>	5
	-30°C - thickness 4 mm	ISO 180/1A	kJ/m <sup>2</sup>	3.5
Rockwell hardness	L/M scale	ISO 2039/2	-	L83
<b>Thermal</b>				
Vicat softening temperature	10 N - 50°C/h	ISO 306/A	°C	94
	50 N - 50°C/h	ISO 306/B	°C	85
Deflection temperature under load (annealed)	1.8 MPa - 120°C/h	ASTM D 648	°C	80
Coefficient of linear thermal expansion		ASTM D 696	10 <sup>-5</sup> /°C	9
Thermal conductivity		ISO 8302	W/(K·m)	0.17
Moulding shrinkage		internal method	%	0.4 - 0.7
<b>Flammability</b>				
Flame behaviour	thickness 1.5 mm	UL 94	class	HB
Glow wire test (GWT)	thickness 1.6 mm	IEC 60695-2-1	°C	650
<b>Electrical</b>				
Surface resistivity		IEC 60093	10 <sup>15</sup> ohm	>1.5
Volume resistivity		IEC 60093	10 <sup>15</sup> ohm·cm	>7
Comparative tracking index (CTI)	solution A	IEC 60112	-	375
Dielectric strength		IEC 60243	kV/mm	65
Dielectric constant (relative permittivity)	50 Hz	IEC 60250	-	2.5
Dissipation factor	50 Hz	IEC 60250	-	0,0003