



versalis

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Technical Data Sheet

EDISTIR[®]

Polystyrene

R 850E

Super high impact polystyrene with good heat resistance.

Designed for sheet extrusion and thermoforming of deep drawn containers even diluted with high percentage of GP.

Suitable for general injection moulding of tough medium-walled articles.

Designation: Thermoplastics ISO 2897-PS-I,G,093-03-10-18

Applications

Typical uses are thermoformed food packaging as disposable tumblers, flatwares, yoghurt cups, lids. Injection moulding of technical items, shoe heels, reels.

Typical processing data

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|---------------------|--|
| Extrusion: | <ul style="list-style-type: none">• melt temperature 210-240°C |
| Injection moulding: | <ul style="list-style-type: none">• predrying normally not required• melt temperature 210-260°C• mould temperature 20-60°C |

General information

R 850E 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
General				
Density		ISO 1183	g/cm ³	1.04
Bulk density		ISO 60	g/cm ³	0.65
Water absorption	24 h - 23°C	ISO 62	%	<0.1
Rheological				
Melt flow rate	200°C - 5 kg	ISO 1133	g/10 min	4
Mechanical				
Tensile stress at yield	50 mm/min	ISO 527	MPa	21
Tensile stress at break	50 mm/min	ISO 527	MPa	24
Tensile strain at break	50 mm/min	ISO 527	%	60
Tensile modulus	1 mm/min	ISO 527	MPa	1750
Flexural strength	2 mm/min	ISO 178	MPa	38
Izod impact strength, notched	+23°C - thickness 3.2 mm	ISO 180/4A	J/m	125
	+23°C - thickness 4 mm	ISO 180/1A	kJ/m ²	10
	-30°C - thickness 4 mm	ISO 180/1A	kJ/m ²	6.5
Rockwell hardness	L/M scale	ISO 2039/2	-	L65
Thermal				
Vicat softening temperature	10 N - 50°C/h	ISO 306/A	°C	99
	50 N - 50°C/h	ISO 306/B	°C	91
Deflection temperature under load (annealed)	1.8 MPa - 120°C/h	ASTM D 648	°C	85
Coefficient of linear thermal expansion		ASTM D 696	10 ⁻⁵ /°C	9
Thermal conductivity		ISO 8302	W/(K·m)	0.17
Moulding shrinkage		internal method	%	0.4 - 0.7
Flammability				
Flame behaviour	thickness 1.5 mm	UL 94	class	HB
Glow wire test (GWT)	thickness 1.6 mm	IEC 60695-2-1	°C	650
Electrical				
Surface resistivity		IEC 60093	10 ¹⁵ ohm	>1.5
Volume resistivity		IEC 60093	10 ¹⁵ ohm·cm	>7
Comparative tracking index (CTI)	solution A	IEC 60112	-	500
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