

## ICE R 830D

Technical Data Sheet

### Polystyrene

Edistir® ICE R 830D is an environmental stress cracking resistant (ESCR) high impact polystyrene. It combines high impact strength with improved chemical resistance to oils, fats and chemical agents, such as detergents for both industrial and domestic use. Edistir® ICE R 830D is specifically designed for fridge sector where hydrocarbons or freons are used as blowing agents for PU insulating foams. It significantly improves wall thickness distribution in thermoforming, thus the original extruded sheet thickness can be optimised.

Designation: Thermoplastic ISO 2897-PS-I,G,088-03-07-12.

### Applications

Edistir® ICE R 830D is suitable in a large variety of sectors such as:

- inner liners and frames for refrigerators
- fatty food packaging
- furniture edge bands.

### Typical processing data

Injection moulding:

- predrying normally not required
- melt temperature 210-260°C
- mould temperature 20-60°C

Extrusion:

- melt temperature 210-240°C

### Certification

✓ UL 94   ✓ IEC62324

Edistir® ICE R 830D, as supplied in the original packaging, by composition is compliant to some existing regulations on plastic materials intended for food contact.

### Storage

- ⚠ Store away from atmospheric agents and direct sunlight, away from sources of heat and light.
- 🕒 The product, if stored correctly, keeps its characteristics for at least fifteen months.

### General information

Edistir® ICE R 830D is available in natural version.



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Property	Test Conditions	Test method	Units	Values
<b>General</b>				
Water absorption	24h - 23°C	ISO 62	%	< 0,1
Density	-	ISO 1183	g/cm <sup>3</sup>	1,04
Bulk density	-	ISO 60	g/cm <sup>3</sup>	0,65
<b>Rheological</b>				
Melt flow rate	200°C - 5kg	ISO 1133	g/10'	3
<b>Mechanical</b>				
Tensile strain at break	50 mm/min	ISO 527	%	70
Tensile stress at break	50 mm/min	ISO 527	MPa	23,5
Tensile stress at yield	50 mm/min	ISO 527	MPa	17
Flexural strength	2 mm/min	ISO 178	MPa	30
Rockwell hardness	L/M	ISO 2039/2	-	L51
Tensile modulus	1 mm/min	ISO 527	MPa	1350
Izod impact strength, notched	-30°C - 4mm	ISO 180/1A	kJ/m <sup>2</sup>	7
Izod impact strength, notched	+23°C - 4mm	ISO 180/1A	kJ/m <sup>2</sup>	10
<b>Thermal</b>				
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	-	ISO 294/4	%	0,4 - 0,7
Deflection temperature under load (annealed)	1,82 MPa - 120°C/h	ISO 75 A	°C	84
Vicat softening temperature	10 N - 50°C/h	ISO 306/A	°C	98
Vicat softening temperature	50 N - 50°C/h	ISO 306/B	°C	88
<b>Flammability</b>				
Flame behaviour	1,5 mm	UL 94	cl.	HB
Glow wire test (GWT)	1,6 mm	IEC 60695-2-10	°C	650
<b>Electrical</b>				
Dielectric constant (relative permittivity)	50 Hz	IEC 60250	-	2,5
Dissipation factor	50 Hz	IEC 60250	-	0,0003
Comparative tracking index (CTI)	Sol. A	IEC 60112	-	500
Surface resistivity	-	IEC 60093	10 <sup>15</sup> ohm	> 1,5
Volume resistivity	-	IEC 60093	10 <sup>15</sup> ohm-cm	> 7
Dielectric strength	-	IEC 60243	kV/mm	65

