

Environmental stress cracking resistant (ESCR) HIPS.  
ICE R 830D combines high impact strength with improved chemical resistance to oils, fats and chemical agents, such as detergents for both industrial and domestic use.  
Developed in particular for the fridge sector where hydrocarbons or freons are used as blowing agents for PU insulating foams.  
Designation: Thermoplastics ISO 2897-PS-I,G,088-03-07-12

## Applications

This grade is suitable for extrusion/thermoforming and injection moulding.  
Typical applications are inner liners and frames for refrigerators and packaging containers for fatty foods.  
ICE R 830D significantly improves wall thickness distribution in thermoforming, thus the original extruded sheet thickness can be optimised.

## Typical processing data

Extrusion:

- melt temperature 210-240°C

Injection moulding:

- predrying normally not required
- melt temperature 210-260°C

## General information

ICE R 830D is certified UL94 HB "all colors" at 1.5 mm (UL file E83071).

This product in the natural version complies by composition with the requirements of the main Regulations for plastic materials intended to come into contact with food, including Regulation (EU) No 10/2011 and following amendments.

ICE R 830D is supplied in cylindrical pellets.

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	16
Flexural strength	2 mm/min	ISO 178	MPa	35
Rockwell hardness	L/M	ISO 2039/2	-	L51
Tensile modulus	1 mm/min	ISO 527	MPa	1450
Izod impact strength, notched	-30°C - 4mm	ISO 180/1A	kJ/m <sup>2</sup>	8
Izod impact strength, notched	+23°C - 4mm	ISO 180/1A	kJ/m <sup>2</sup>	10
Izod impact strength, notched	+23°C - 3,2mm	ISO 180/4A	J/m	130
<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	ASTM D 648	°C	82
Vicat softening temperature	50 N - 50°C/h	ISO 306/B	°C	88
Vicat softening temperature	10 N - 50°C/h	ISO 306/A	°C	96
<b>Flammability</b>				
Flame behaviour	1,5 mm	UL 94	cl.	HB
Glow wire test (GWT)	1,6 mm	IEC 60695-2-1	°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

Please consult the relevant safety data sheet for more detailed information.

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