



versalis

info.styrenics@versalis.eni.com

Technical Data Sheet

EDISTIR®

Polystyrene

ICE S 900

Very high environmental stress cracking resistant (VH ESCR) HIPS.

ICE S 900 exhibits high toughness and excellent chemical resistance to oils, fats and chemical agents and in particular to cyclopentane.

Suitable for extrusion / thermoforming and injection moulding.

Designation: Thermoplastics ISO 2897-PS-I,G,093-03-07-12

Applications

Designed for inner liners and frames for refrigerators where cyclopentane is used as blowing agent for insulating polyurethane foams.

ICE S 900 significantly improves the wall thickness distribution in thermoforming and allows to optimize the thickness of the original extruded sheet.

Typical processing data

- Extrusion: • melt temperature 210-240°C
- Injection moulding: • predrying normally not required
- melt temperature 210-260°C
 - mould temperature 20-60°C

General information

ICE S 900 satisfies UL94 HB at 1.5 mm (internal test).

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).

ICE S 900 is supplied in round pellets.

Properties	Test conditions	Test methods	Units	Values
General				
Density		ISO 1183	g/cm ³	1.05
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	2.5
Mechanical				
Tensile stress at yield	50 mm/min	ISO 527	MPa	17.5
Tensile stress at break	50 mm/min	ISO 527	MPa	25
Tensile strain at break	50 mm/min	ISO 527	%	70
Tensile modulus	1 mm/min	ISO 527	MPa	1450
Flexural strength	2 mm/min	ISO 178	MPa	-
Izod impact strength, notched	+23°C - thickness 3.2 mm	ISO 180/4A	J/m	-
	+23°C - thickness 4 mm	ISO 180/1A	kJ/m ²	11
	-30°C - thickness 4 mm	ISO 180/1A	kJ/m ²	-
Rockwell hardness	L/M scale	ISO 2039/2	-	-
Thermal				
Vicat softening temperature	10 N - 50°C/h	ISO 306/A	°C	-
	50 N - 50°C/h	ISO 306/B	°C	92
Deflection temperature under load (annealed)	1.8 MPa - 120°C/h	ASTM D 648	°C	-
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 (internal test)	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