



Apec® 1745

Standard grades / Medical applications, suitable for superheated steam sterilization

MVR (330°C/2.16kg) 17 cm³/10 min; easy release; suitable for superheated steam sterilisation up to 143 °C as well as for pharmaceutical applications according to United States Pharmacopeia (USP) XXII Class VI; softening temperature (VST/B 120)=170 °C; injection molding - melt temperature 320 - 340°C; Films for medical packaging; Contact lens holders; Medical vessels; Safety valve for respiration aids; Syringe tops

ISO Shortname

PC-HT

Property	Test Condition	Unit	Standard	typical Value
Rheological properties				
C Melt volume-flow rate	330 °C/ 2.16 kg	cm³/10 min	ISO 1133	17
Melt mass-flow rate	330 °C/ 2.16 kg	g/10 min	ISO 1133	17
C Molding shrinkage, parallel	60x60x2 mm/ 500 bar	%	ISO 294-4	0.85
C Molding shrinkage, normal	60x60x2 mm/ 500 bar	%	ISO 294-4	0.85
Mechanical properties (23 °C/50 % r. h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2400
C Yield stress	50 mm/min	MPa	ISO 527-1,-2	70
C Yield strain	50 mm/min	%	ISO 527-1,-2	6.8
C Nominal strain at break	50 mm/min	%	ISO 527-1,-2	> 50
C Charpy impact strength	23 °C	kJ/m²	ISO 179/1eU	N
C Charpy impact strength	-30 °C	kJ/m²	ISO 179/1eU	N
Flexural modulus	2 mm/min	MPa	ISO 178	2400
Ball indentation hardness		N/mm²	ISO 2039-1	120
Thermal properties				
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	148
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	161
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	170
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.65
C Coefficient of linear thermal expansion, normal	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.65
C Burning behavior UL 94 (1.5 mm) [UL recognition]	1.5 mm	Class	UL 94	HB
C Oxygen index	Method A	%	ISO 4589-2	25
Glow wire test (GWFI)	2.0 mm	°C	IEC 60695-2-12	850
Electrical properties (23 °C/50 % r. h.)				
C Relative permittivity	100 Hz	-	IEC 60250	3
C Relative permittivity	1 MHz	-	IEC 60250	2.9
C Dissipation factor	100 Hz	10 ⁻⁴	IEC 60250	10
C Dissipation factor	1 MHz	10 ⁻⁴	IEC 60250	80
C Volume resistivity		Ohm·m	IEC 60093	1E15
C Surface resistivity		Ohm	IEC 60093	1E16
C Electrical strength	1 mm	kV/mm	IEC 60243-1	35
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	250
Comparative tracking index CTI M	Solution B	Rating	IEC 60112	125
Electrolytic corrosion		Rating	IEC 60426	A1
Other properties (23 °C)				
C Water absorption (saturation value)	Water at 23 °C	%	ISO 62	0.3
C Water absorption (equilibrium value)	23 °C; 50 % r. h.	%	ISO 62	0.12
C Density		kg/m³	ISO 1183-1	1170
Material specific properties				
Refractive index	Procedure A	-	ISO 489	1.578
Luminous transmittance (clear transparent materials)	1 mm	%	ISO 13468-2	88





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Processing conditions for test specimens				
C Injection molding - Melt temperature		°C	ISO 294	330
C Injection molding - Mold temperature		°C	ISO 294	100
C Injection molding - Injection velocity		mm/s	ISO 294	200
Recommended processing and drying conditions				
Melt temperatures		°C	-	320 - 340
Standard Melt temperature		°C	-	330
Barrel Temperatures - Rear		°C	-	290 - 300
Barrel Temperatures - Middle		°C	-	300 - 310
Barrel Temperatures - Front		°C	-	310 - 320
Barrel Temperatures - Nozzle		°C	-	320 - 330
Mold Temperatures		°C	-	110 - 130
Hold Pressure (% of injection pressure)		%	-	50 - 75
Plastic Back Pressure (specific)		bar	-	50 - 150
Peripheral Screw Speed		m/s	-	0.05 - 0.2
Shot-to-Cylinder Size		%	-	30 - 70
Dry Air Drying Temperature		°C	-	130
Dry Air Drying Time		h	-	2-3
Moisture Content max. (%)		%	-	<= 0.02
Vent Depth		mm	-	0.025 - 0.075

C These property characteristics are taken from the CAMPUS plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350.

Impact properties: N = non-break, P = partial break, C = complete break

