Apec® 1803

Standard grades / UV-stabilized	MVR (330°C/2.16kg) 10 cm³/10 min; high viscosity; UV stabilized; 'softening temperature (VST/B 120)=184 °C; injection molding - melt temperature 330 - 340°C; Covers for brake lights and indicator lights; car interior light covers; Domestic lamp covers; Headlamp lenses; Covers for ships' lights; Connector pieces for halogen systems
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	10
	Melt mass-flow rate	330 °C/ 2.16 kg	g/10 min	ISO 1133	10
C	Molding shrinkage, parallel	60x60x2 mm	%	ISO 294-4	0.85
C	Molding shrinkage, normal	60x60x2 mm	%	ISO 294-4	0.85
Mechanical properties (23 °C/50 % r. h.)					
C	Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2350
C	Yield stress	50 mm/min	MPa	ISO 527-1,-2	72
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
	Flexural strength	2 mm/min	MPa	ISO 178	106
	Ball indentation hardness		N/mm²	ISO 2039-1	121
Thermal properties					
C	Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	158
C	Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	174
	Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	184
	Relative temperature index (Tensile strength)		°C	UL 746B	150
	Relative temperature index (Tensile impact strength)		°C	UL 746B	130
	Relative temperature index (Electric strength)		°C	UL 746B	150
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)		°C	IEC 60695-2-12	850
Electrical properties (23 °C/50 % r. h.)					
C	Relative permittivity	100 Hz	-	IEC 60250	2,9
C	Relative permittivity	1 MHz	-	IEC 60250	2,8
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	450
	Comparative tracking index CTI M	Solution B	Rating	IEC 60112	100
	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	1150

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	Property	Test Condition	Unit	Standard	typical Value
Material specific properties					
	Refractive index	Procedure A	-	ISO 489	1.573
	Luminous transmittance (clear transparent materials)	1 mm	%	ISO 13468-2	89
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	-	330 - 340
	Standard Melt temperature		°C	-	335
	Barrel Temperatures - Rear		°C	-	295 - 305
	Barrel Temperatures - Middle		°C	-	305 - 315
	Barrel Temperatures - Front		°C	-	315 - 325
	Barrel Temperatures - Nozzle		°C	-	325 - 335
	Mold Temperatures		°C	-	120 - 140
	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