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

	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	%	ISO 294-4	0.8
C	Molding shrinkage, normal	60x60x2 mm	%	ISO 294-4	0.8
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
	Flexural strength	2 mm/min	MPa	ISO 178	105
	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	160
	Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	170
	Relative temperature index (Tensile strength)		°C	UL 746B	140
	Relative temperature index (Tensile impact strength)		°C	UL 746B	130
	Relative temperature index (Electric strength)		°C	UL 746B	140
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, transverse	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	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

Apec® 1745

	Property	Test Condition	Unit	Standard	typical Value
Material specific properties					
	Refractive index	Procedure A	-	ISO 489	1.578
	Luminous transmittance (clear transparent materials)	1 mm	%	ISO 13468-2	88
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

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

Apec® 1745

Disclaimer

Typical value

These values are typical values only. Unless explicitly agreed in written form, the do not constitute a binding material specification or warranted values. Values may be affected by the design of the mold/die, the processing conditions and coloring/pigmentation of the product. Unless specified to the contrary, the property values given have been established on standardized test specimens at room temperature.

General

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance, information and recommendations to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by Covestro. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent. With respect to health, safety and environment precautions, the relevant Material Safety Data Sheets (MSDS) and product labels must be observed prior to working with our products.

Covestro Medical Grades

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance, information and recommendations to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by Covestro. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent. For more information on Covestro products in Medical Applications, please request from your sales support contact our Guidance document: Guidance on use of Covestro products in a medical application.

Appropriate Use of Covestro Products in a Medical Application

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. The biocompatibility testing referenced above cannot assure the biocompatibility of final or intermediate products made from Covestro products or the suitability of such products for their use in a Medical Application, i.e., the test data cannot be used to conclude that any medical devices manufactured from the Covestro products meet the necessary requirements of ISO Standard 10993-1. It is the sole responsibility of the manufacturer of final end-use product to conduct all necessary tests (including biocompatibility tests) and inspections and to evaluate the final product under actual end-use requirements. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.

Covestro AG

Polycarbonates Business Unit

Kaiser-Wilhelm-Allee 60

51373 Leverkusen

Germany

plastics@covestro.com

www.plastics.covestro.com