

## Covestro Apec® 1600 Polycarbonate (discontinued \*\*)

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Molded

### Material Notes:

Key Features: Unfilled Suitable processing methods: Injection molding Film extrusion Profile extrusion Sheet extrusion Coating Blow molding Calendering Transfer molding Thermoforming Information provided by Bayer Polymers. As of 1 September 2015, Bayer Material Science was separated from Bayer AG and has officially adopted its new name – Covestro. This product was discontinued prior to the separation.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Covestro-Apec-1600-Polycarbonate-nbspdiscontinued-.php](http://www.lookpolymers.com/polymer_Covestro-Apec-1600-Polycarbonate-nbspdiscontinued-.php)

Physical Properties	Metric	English	Comments
Density	1.005 g/cc	0.03631 lb/in <sup>3</sup>	Melt
	1.18 g/cc	0.0426 lb/in <sup>3</sup>	
Water Absorption	0.40 %	0.40 %	
Moisture Absorption at Equilibrium	0.20 %	0.20 %	23°C/50% R.H.
Melt Flow	25 g/10 min	25 g/10 min	
	@Load 2.16 kg, Temperature 330 °C	@Load 4.76 lb, Temperature 626 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	65.0 MPa	9430 psi	
Elongation at Break	>= 50 %	>= 50 %	Nominal
Elongation at Yield	7.0 %	7.0 %	
Tensile Modulus	2.30 GPa	334 ksi	
Charpy Impact Unnotched	NB	NB	
	NB	NB	
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	1.00 J/cm <sup>2</sup>	4.76 ft-lb/in <sup>2</sup>	
	1.00 J/cm <sup>2</sup>	4.76 ft-lb/in <sup>2</sup>	
	@Temperature -30.0 °C	@Temperature -22.0 °F	

Thermal Properties	Metric	English	Comments
	70.0 µm/m-°C	38.9 µin/in-°F	

CTE, linear, Parallel to Flow			
Thermal Properties	Metric @ Temperature 20.0 °C	English @ Temperature 68.0 °F	Comments
CTE, linear, Transverse to Flow	70.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature 20.0 °C	38.9 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature 68.0 °F	
Specific Heat Capacity	1.70 J/g-°C	0.406 BTU/lb-°F	Melt
Thermal Conductivity	0.171 W/m-K	1.19 BTU-in/hr-ft <sup>2</sup> -°F	Melt
Deflection Temperature at 0.46 MPa (66 psi)	152 °C	306 °F	
Deflection Temperature at 1.8 MPa (264 psi)	140 °C	284 °F	
Vicat Softening Point	158 °C	316 °F	50°C/h 50N
Flammability, UL94	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	UL Recognized
	HB @Thickness 3.00 mm	HB @Thickness 0.118 in	UL Recognized
Oxygen Index	24 %	24 %	

Optical Properties	Metric	English	Comments
Transmission, Visible	80 %	80 %	Manufacturer states transparent but does not quantify

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00\text{e}+13$ ohm-cm	$\geq 1.00\text{e}+13$ ohm-cm	
Surface Resistance	$\geq 1.00\text{e}+15$ ohm	$\geq 1.00\text{e}+15$ ohm	
Dielectric Constant	3.0 @Frequency 100 Hz	3.0 @Frequency 100 Hz	
	3.0 @Frequency 1e+6 Hz	3.0 @Frequency 1e+6 Hz	
Dielectric Strength	35.0 kV/mm	889 kV/in	
Dissipation Factor	0.0016 @Frequency 100 Hz	0.0016 @Frequency 100 Hz	
	0.0087 @Frequency 1e+6 Hz	0.0087 @Frequency 1e+6 Hz	

Comparative Tracking Index Electrical Properties	375 V Metric	375 V English	Comments
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Processing Properties	Metric	English	Comments
Melt Temperature	330 °C	626 °F	Injection Molding
Mold Temperature	100 °C	212 °F	Injection Molding
Ejection Temperature	142 °C	288 °F	
Injection Velocity	200 mm/sec	7.87 in/sec	

Descriptive Properties	Value	Comments
Effective thermal diffusivity	0.1E-6 m <sup>2</sup> /s	Melt

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China