

Apec® 1603

 Covestro - Polycarbonates - *Polycarbonate*

General Information

Product Description

 MVR (330°C/2.16kg) 25 cm³/10 min; high viscosity; UV stabilized; softening temperature (VST/B 120)=159°C; injection molding - melt temperature 320 - 340°C

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Europe	• North America
	• Asia Pacific	• Latin America	
Additive	• UV Stabilizer		
Features	• High Viscosity	• UV Stabilized	
RoHS Compliance	• RoHS Compliant		
Processing Method	• Injection Molding		

 Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.18	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (330°C/2.16 kg)	26	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (330°C/2.16 kg)	25	cm ³ /10min	ISO 1133
Molding Shrinkage ²			ISO 294-4
Across Flow : 0.0787 in	0.75	%	
Flow : 0.0787 in	0.75	%	
Water Absorption (Saturation, 73°F)	0.30	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.12	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	341000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	9860	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	6.3	%	ISO 527-2/50
Nominal Tensile Strain at Break (73°F)	> 50	%	ISO 527-2/50
Flexural Modulus ³ (73°F)	348000	psi	ISO 178
Flexural Stress ³ (73°F)	14900	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	No Break		
73°F	No Break		
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	17400	psi	ISO 2039-1
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	302	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	279	°F	ISO 75-2/A
Vicat Softening Temperature	318	°F	ISO 306/B120
CLTE - Flow (73 to 131°F)	3.6E-5	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	3.6E-5	in/in/°F	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+16	ohms	IEC 60093
Volume Resistivity (73°F)	1.0E+17	ohms·cm	IEC 60093
Electric Strength (73°F, 0.0394 in)	890	V/mil	IEC 60243-1
Relative Permittivity			IEC 60250
73°F, 100 Hz	3.00		



73°F, 1 MHz	2.90	
Dissipation Factor		IEC 60250
73°F, 100 Hz	1.0E-3	
73°F, 1 MHz	9.0E-3	
Comparative Tracking Index		IEC 60112
Solution A	250 V	
Solution B	125 V	
Electrolytic Corrosion (73°F)	A1	IEC 60426
Flammability	Nominal Value	Unit
Flame Rating		UL 94
0.06 in	HB	
0.12 in	HB	
Glow Wire Flammability Index	1650 °F	IEC 60695-2-12
Oxygen Index ⁴	26 %	ISO 4589-2
Optical	Nominal Value	Unit
Refractive Index ⁵	1.578	ISO 489
Light Transmittance (39.37 mil)	89.0 %	ISO 13468-2

Processing Information

	Nominal Value	Unit
Injection		
Drying Temperature - Dry Air Dryer	266	°F
Drying Time - Dry Air Dryer	2.0 to 3.0	hr
Suggested Max Moisture	< 0.020	%
Suggested Shot Size	30 to 70	%
Rear Temperature	554 to 572	°F
Middle Temperature	572 to 590	°F
Front Temperature	590 to 608	°F
Nozzle Temperature	608 to 626	°F
Processing (Melt) Temp	608 to 644	°F
Mold Temperature	212 to 248	°F
Back Pressure	725 to 2180	psi
Vent Depth	9.8E-4 to 2.0E-3	in

Injection Notes

Peripheral Screw Speed: 0.05 - 0.2 m/s
Standard Melt Temperature: 330°C
Hold Pressure (% of Injection Pressure): 50 - 75%

Notes

- ¹ Typical properties: these are not to be construed as specifications.
- ² 60x60x2mm
- ³ 0.079 in/min
- ⁴ Procedure A
- ⁵ Method A

