Apec® 1803

Covestro - Polycarbonates - *Polycarbonate*

General Information

Product Description

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

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

Properties [1]

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.15	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (330°C/2.16 kg)	10	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (330°C/2.16 kg)	10	cm³/10min	ISO 1133
Molding Shrinkage [2]			ISO 294-4
Across Flow : 0.0787 in	0.85	%	
Flow : 0.0787 in	0.85	%	
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)	10400	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	6.8	%	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)	15400	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	17500	psi	ISO 2039-1
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (66 psi, Unannealed)	345	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	316	°F	ISO 75-2/A
Vicat Softening Temperature	363	°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
RTI Elec	302	°F	UL 746B
RTI Imp	266	°F	UL 746B
RTI Str	302	°F	UL 746B

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	2.90		
73°F, 1 MHz	2.80		
Dissipation Factor			IEC 60250
73°F, 100 Hz	1.0E-3		
73°F, 1 MHz	8.0E-3		
Comparative Tracking Index			IEC 60112
Solution A	450	V	
Solution B	100	V	
Electrolytic Corrosion (73°F)	A1		IEC 60426

Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.06 in)	HB		UL 94
Glow Wire Flammability Index	1560	°F	IEC 60695-2-12
Oxygen Index [4]	25	%	ISO 4589-2

Optical	Nominal Value	Unit	Test Method
Refractive Index [5]	1.573		ISO 489
Light Transmittance (39.37 mil)	89.0	%	ISO 13468-2

Processing Information

Injection	Nominal Value	Unit
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	563 to 581	°F
Middle Temperature	581 to 599	°F
Front Temperature	599 to 617	°F
Nozzle Temperature	617 to 635	°F
Processing (Melt) Temp	608 to 644	°F
Mold Temperature	248 to 284	°F
Back Pressure	725 to 2180	psi
Vent Depth	9.8E-4 to 3.0E-3	in

Injection Notes

Peripheral Screw Speed: 0.05 - 0.2 m/s
Standard Melt Temperature: 335°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