

Bayblend® FR3010

Covestro - Polycarbonates - Polycarbonate + ABS

Thursday, December 21, 2023

General Information

Product Description

(PC+ABS)-Blend; flame retardant; Vicat/B 120 temperature = 110°C; increased heat resistance; UL recognition 94 V-0 at 1.5 mm; glow wire temperature (GWFI): 960°C at 2.0 mm; improved chemical resistance and stress cracking behavior; successor to FR2010

General

Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Additive	• Flame Retardant		
Features	• Chemical Resistant • Flame Retardant	• High ESCR (Stress Crack Resist.) • Medium Heat Resistance	
RoHS Compliance	• RoHS Compliant		
ISO Shortname	• PC+ABS-FR(40)		

ASTM & ISO Properties ¹

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density (73°F (23°C))	1.18 g/cm ³	1.18 g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (240°C/5.0 kg)	15 cm ³ /10min	15 cm ³ /10min	ISO 1133
Molding Shrinkage ²			ISO 2577
Across Flow : 464°F (240°C), 0.118 in (3.00 mm)	0.50 to 0.70 %	0.50 to 0.70 %	
Flow : 464°F (240°C), 0.118 in (3.00 mm)	0.50 to 0.70 %	0.50 to 0.70 %	
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.50 %	0.50 %	
Equilibrium, 73°F (23°C), 50% RH	0.20 %	0.20 %	
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus (73°F (23°C))	392000 psi	2700 MPa	ISO 527-1/1
Tensile Stress			ISO 527-2/50
Yield, 73°F (23°C)	8700 psi	60.0 MPa	
Break, 73°F (23°C)	7250 psi	50.0 MPa	
Tensile Strain			ISO 527-2/50
Yield, 73°F (23°C)	4.0 %	4.0 %	
Break, 73°F (23°C)	> 50 %	> 50 %	

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Impact	Typical Value (English)	Typical Value (SI)	Test Method
Notched Izod Impact Strength			ISO 180/A
-22°F (-30°C)	4.8 ft·lb/in ²	10 kJ/m ²	
73°F (23°C)	17 ft·lb/in ²	35 kJ/m ²	
Unnotched Izod Impact Strength (73°F (23°C))	No Break	No Break	ISO 180
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed	212 °F	100 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	194 °F	90.0 °C	ISO 75-2/A
Vicat Softening Temperature			
--	230 °F	110 °C	ISO 306/B120
--	226 °F	108 °C	ISO 306/B50
CLTE			ISO 11359-2
Flow : 73 to 131°F (23 to 55°C)	4.2E-5 in/in/°F	7.6E-5 cm/cm/°C	
Transverse : 73 to 131°F (23 to 55°C)	4.4E-5 in/in/°F	8.0E-5 cm/cm/°C	
Electrical	Typical Value (English)	Typical Value (SI)	Test Method
Surface Resistivity	1.0E+16 ohms	1.0E+16 ohms	IEC 60093
Volume Resistivity (73°F (23°C))	1.0E+16 ohms·cm	1.0E+16 ohms·cm	IEC 60093
Electric Strength			IEC 60243-1
73°F (23°C), 0.0394 in (1.00 mm)	890 V/mil	35 kV/mm	
Relative Permittivity			IEC 60250
73°F (23°C), 100 Hz	3.20	3.20	
73°F (23°C), 1 MHz	3.10	3.10	
Dissipation Factor			IEC 60250
73°F (23°C), 100 Hz	5.0E-3	5.0E-3	
73°F (23°C), 1 MHz	7.0E-3	7.0E-3	
Comparative Tracking Index (Solution A)	350 V	350 V	IEC 60112
Flammability	Typical Value (English)	Typical Value (SI)	Test Method
Flame Rating			UL 94
0.06 in (1.5 mm)	V-0	V-0	
0.08 in (2.0 mm)	5VB	5VB	
0.12 in (3.0 mm)	5VA	5VA	
Oxygen Index ³	32 %	32 %	ISO 4589-2
Fill Analysis	Typical Value (English)	Typical Value (SI)	Test Method
Melt Viscosity ⁴ (500°F (260°C))	245 Pa·s	245 Pa·s	ISO 11443-A

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature - Dry Air Dryer	176 °F	80 °C
Drying Time - Dry Air Dryer	4.0 hr	4.0 hr
Suggested Max Moisture	< 0.020 %	< 0.020 %
Suggested Shot Size	30 to 70 %	30 to 70 %
Rear Temperature	428 to 446 °F	220 to 230 °C
Middle Temperature	437 to 455 °F	225 to 235 °C
Front Temperature	446 to 464 °F	230 to 240 °C

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Injection	Typical Value (English)	Typical Value (SI)
Nozzle Temperature	491 to 509 °F	255 to 265 °C
Processing (Melt) Temp	464 to 518 °F	240 to 270 °C
Mold Temperature	140 to 194 °F	60 to 90 °C
Back Pressure	725 to 2180 psi	5.00 to 15.0 MPa
Vent Depth	9.8E-4 to 3.0E-3 in	0.025 to 0.075 mm

Injection Notes

Standard Melt Temperature: 260°C

Hold Pressure (% of Injection Pressure): 50 - 75%

Peripheral Screw Speed: 0.05 - 0.2 m/s

Notes

¹ Typical properties: these are not to be construed as specifications.

² 150x105x3mm,, MT 80°C

³ Procedure A

⁴ 1000s-1

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