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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/cm³	1.18	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (240°C/5.0 kg)	15	cm³/10min	15	cm³/10min	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/in²	10	kJ/m²	
73°F (23°C)	17	ft·lb/in²	35	kJ/m²	
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