XENOY™ 5720U resin

Polycarbonate + PBT

SABIC Innovative Plastics Asia Pacific

Technical Data

Product Description	
Unfilled PBT+PC alloy. Outstanding low temperature impact/chemical resistance. UV stabilized version of XENOY	

General		
Additive	• UV Stabilizer	
Features	• Good Chemical Resistance	• Low Temperature Impact Resistance
Processing Method	• Injection Molding	

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity			
--	1.17	1.17 g/cm³	ASTM D792
--	1.17 g/cm³	1.17 g/cm³	ISO 1183 ASTM D792
Specific Volume	23.5 in³/lb	0.850 cm³/g	ASTM D792
Melt Mass-Flow Rate (MFR)			
250°C/2.16 kg	3.8 g/10 min	3.8 g/10 min	ASTM D1238 ISO 1133
250°C/5.0 kg	11 g/10 min	11 g/10 min	ASTM D1238 ISO 1133
265°C/2.16 kg	6.8 g/10 min	6.8 g/10 min	ASTM D1238
266°C/5.0 kg	20 g/10 min	20 g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
250°C/2.16 kg	0.220 in³/10min	3.60 cm³/10min	
250°C/5.0 kg	0.665 in³/10min	10.9 cm³/10min	
265°C/2.16 kg	0.397 in³/10min	6.50 cm³/10min	
265°C/5.0 kg	1.15 in³/10min	18.9 cm³/10min	
Molding Shrinkage - Flow (0.126 in (3.20 mm))	0.010 to 0.012 in/in	1.0 to 1.2 %	Internal Method
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.28 %	0.28 %	
Equilibrium, 73°F (23°C), 50% RH	0.080 %	0.080 %	

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- [4]	265000 psi	1830 MPa	ASTM D638
-- [5]	266000 psi	1830 MPa	Internal Method
-- [6]	264000 psi	1820 MPa	ASTM D638
--	260000 psi	1800 MPa	ISO 527-2/1

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Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			
Yield [7]	6380 psi	44.0 MPa	ASTM D638
Yield [8]	6530 psi	45.0 MPa	Internal Method
Yield [9]	6820 psi	47.0 MPa	ASTM D638
Yield	6380 psi	44.0 MPa	ISO 527-2/5
Yield	6820 psi	47.0 MPa	ISO 527-2/50
Break [7]	7250 psi	50.0 MPa	ASTM D638
Break [8]	6820 psi	47.0 MPa	Internal Method
Break [9]	6960 psi	48.0 MPa	ASTM D638
Break	6240 psi	43.0 MPa	ISO 527-2/5 ISO 527-2/50
Tensile Elongation			
Yield [7]	4.6 %	4.6 %	ASTM D638
Yield [8]	4.6 %	4.6 %	Internal Method
Yield [9]	4.0 %	4.0 %	ASTM D638
Yield	4.1 %	4.1 %	ISO 527-2/5
Yield	4.6 %	4.6 %	ISO 527-2/50
Break [7]	120 %	120 %	ASTM D638
Break [8]	110 %	110 %	Internal Method
Break [9]	120 %	120 %	ASTM D638
Break	110 %	110 %	ISO 527-2/5
Break	120 %	120 %	ISO 527-2/50
Flexural Modulus			
1.97 in (50.0 mm) Span [10]	241000 psi	1660 MPa	ASTM D790
-- [11]	271000 psi	1870 MPa	ISO 178
Flexural Stress			
-- [11, 12]	10300 psi	71.0 MPa	ISO 178
Yield, 1.97 in (50.0 mm) Span [10]	10200 psi	70.0 MPa	ASTM D790
Break, 1.97 in (50.0 mm) Span [10]	10000 psi	69.0 MPa	ASTM D790

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength [13]			ISO 179/1eA
-22°F (-30°C)	23 ft·lb/in²	48 kJ/m²	
73°F (23°C)	27 ft·lb/in²	56 kJ/m²	
Notched Izod Impact			
-40°F (-40°C)	11 ft·lb/in	600 J/m	ASTM D256
-22°F (-30°C)	12 ft·lb/in	650 J/m	ASTM D256
-4°F (-20°C)	13 ft·lb/in	700 J/m	ASTM D256
14°F (-10°C)	12 ft·lb/in	660 J/m	ASTM D256
32°F (0°C)	13 ft·lb/in	690 J/m	ASTM D256
73°F (23°C)	14 ft·lb/in	720 J/m	ASTM D256
-40°F (-40°C) [14]	22 ft·lb/in²	46 kJ/m²	ISO 180/1A
-22°F (-30°C) [14]	23 ft·lb/in²	48 kJ/m²	ISO 180/1A
-4°F (-20°C) [14]	24 ft·lb/in²	50 kJ/m²	ISO 180/1A
14°F (-10°C) [14]	25 ft·lb/in²	52 kJ/m²	ISO 180/1A
32°F (0°C) [14]	26 ft·lb/in²	55 kJ/m²	ISO 180/1A
73°F (23°C) [14]	27 ft·lb/in²	56 kJ/m²	ISO 180/1A

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Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Instrumented Dart Impact			ASTM D3763
-40°F (-40°C), Energy at Peak Load	438 in·lb	49.5 J	
-40°F (-40°C), Total Energy	524 in·lb	59.2 J	
-22°F (-30°C), Energy at Peak Load	438 in·lb	49.5 J	
-22°F (-30°C), Total Energy	548 in·lb	61.9 J	
-4°F (-20°C), Energy at Peak Load	371 in·lb	41.9 J	
-4°F (-20°C), Total Energy	471 in·lb	53.2 J	
73°F (23°C), Energy at Peak Load	397 in·lb	44.8 J	
73°F (23°C), Total Energy	478 in·lb	54.0 J	

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed, 0.126 in (3.20 mm)	226 °F	108 °C	ASTM D648
66 psi (0.45 MPa), Unannealed, 0.252 in (6.40 mm)	243 °F	117 °C	ASTM D648
66 psi (0.45 MPa), Unannealed, 2.52 in (64.0 mm) Span [15]	229 °F	110 °C	ISO 75-2/Bf
264 psi (1.8 MPa), Unannealed, 0.126 in (3.20 mm)	182 °F	83.5 °C	ASTM D648
264 psi (1.8 MPa), Unannealed, 0.252 in (6.40 mm)	205 °F	95.9 °C	ASTM D648
264 psi (1.8 MPa), Unannealed, 2.52 in (64.0 mm) Span [15]	189 °F	87.0 °C	ISO 75-2/Af
Vicat Softening Temperature			
--	248 °F	120 °C	ASTM D1525 [16] ISO 306/B50 [16]
--	252 °F	122 °C	ISO 306/B120
CLTE			
Flow : -40 to 203°F (-40 to 95°C)	5.4E-5 in/in/°F	9.8E-5 cm/cm/°C	ASTM E831
Flow : -22 to 176°F (-30 to 80°C)	5.4E-5 in/in/°F	9.8E-5 cm/cm/°C	ISO 11359-2
Transverse : -40 to 203°F (-40 to 95°C)	5.6E-5 in/in/°F	1.0E-4 cm/cm/°C	ASTM E831
Transverse : -22 to 176°F (-30 to 80°C)	5.6E-5 in/in/°F	1.0E-4 cm/cm/°C	ISO 11359-2

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	230 °F	110 °C
Drying Time	4.0 to 6.0 hr	4.0 to 6.0 hr
Drying Time, Maximum	8.0 hr	8.0 hr
Suggested Max Moisture	0.020 %	0.020 %
Suggested Shot Size	50 to 80 %	50 to 80 %
Rear Temperature	470 to 510 °F	243 to 266 °C
Middle Temperature	480 to 520 °F	249 to 271 °C
Front Temperature	490 to 530 °F	254 to 277 °C
Nozzle Temperature	490 to 520 °F	254 to 271 °C
Processing (Melt) Temp	500 to 530 °F	260 to 277 °C
Mold Temperature	150 to 190 °F	65.6 to 87.8 °C
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa
Screw Speed	50 to 80 rpm	50 to 80 rpm
Vent Depth	5.0E-4 to 8.0E-4 in	0.013 to 0.020 mm