

VALOX™ 176 resin

Polybutylene Terephthalate

SABIC Innovative Plastics

Message:

Unreinforced, neat PBT resin for fibers. Natural Color Only, Not intended for injection molding.

General Information			
Uses	Fiber		
Appearance	Natural color		
Processing Method	Compound extrusion		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.32	g/cm ³	ASTM D792
--	1.31	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (250°C/1.2 kg)	130	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
250°C/1.2 kg	127	cm ³ /10min	ISO 1133
250°C/2.16 kg	231	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal method
Flow: 3.20mm	1.5 - 1.8	%	Internal method
Transverse flow: 3.20mm	1.6 - 2.0	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.080	%	ISO 62
Equilibrium, 23°C, 50% RH	0.070	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2500	MPa	ASTM D638
--	2600	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	50.0	MPa	ASTM D638
Yield	45.0	MPa	ISO 527-2/50
Fracture ³	50.0	MPa	ASTM D638
Fracture	45.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	2.0	%	ASTM D638
Yield	1.8	%	ISO 527-2/50
Fracture ⁵	2.0	%	ASTM D638
Fracture	1.8	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2390	MPa	ASTM D790

-- ⁷	2290	MPa	ISO 178
Flexural Stress			
--	81.0	MPa	ISO 178
Yield, 50.0mm span ⁸	84.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	7.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
23°C	28	J/m	ASTM D256
23°C ¹⁰	2.9	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	890	J/m	ASTM D4812
23°C ¹¹	35	kJ/m ²	ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	5.00	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	104	°C	ASTM D648
0.45 MPa, unannealed, 64.0mm span ¹²	113	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 3.20mm	48.0	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹³	51.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	178	°C	ISO 306/B50
--	177	°C	ISO 306/B120
Linear thermal expansion coefficient			ISO 11359-2
Flow: -40 to 40°C	8.5E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	8.5E-5	cm/cm/°C	ISO 11359-2
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity	35.0	Pa · s	Internal method
Extrusion	Nominal Value	Unit	
Drying Temperature	110 - 120	°C	
Drying Time	4.0 - 6.0	hr	
Suggested Max Moisture	0.020	%	
Cylinder Zone 1 Temp.	200 - 230	°C	
Cylinder Zone 2 Temp.	240 - 255	°C	
Cylinder Zone 3 Temp.	240 - 275	°C	
Cylinder Zone 4 Temp.	240 - 275	°C	
Adapter Temperature	240 - 275	°C	
Melt Temperature	245 - 260	°C	
Die Temperature	240 - 275	°C	
Extrusion instructions			
Drying Time (Cumulative): 8 hrsWater Bath Temperature: 25 - 35 °C			
NOTE			

1.	5.0 mm/min
2.	Type 1, 50mm/min
3.	Type 1, 50mm/min
4.	Type 1, 50mm/min
5.	Type 1, 50mm/min
6.	1.3 mm/min
7.	2.0 mm/min
8.	1.3 mm/min
9.	80*10*4 sp=62mm
10.	80*10*4
11.	80*10*4
12.	80*10*4 mm
13.	80*10*4 mm

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