

VALOX™ 420HP resin

Polybutylene Terephthalate

SABIC Innovative Plastics

Message:

30% Glass filled PBT resin, FDA Food Contact compliant in limited colors.

General Information			
Filler / Reinforcement	Glass fiber reinforced material, 30% filler by weight		
Features	Compliance of Food Exposure		
Agency Ratings	FDA Food Exposure, Not Rated		
RoHS Compliance	RoHS compliance		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.53	g/cm ³	ASTM D792, ISO 1183
Specific Volume	0.650	cm ³ /g	ASTM D792
Filler Content	30	%	ASTM D229
Melt Mass-Flow Rate (MFR) (250°C/2.16 kg)	17	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	13.0	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal method
Flow ¹	0.30 - 0.70	%	Internal method
Flow ²	0.50 - 0.80	%	Internal method
Flow ³	0.30 - 0.50	%	Internal method
Flow: 3.20mm	0.30 - 0.80	%	Internal method
Transverse flow ⁴	0.50 - 1.0	%	Internal method
Transverse flow ⁵	0.60 - 0.90	%	Internal method
Transverse flow ⁶	0.40 - 0.60	%	Internal method
Transverse flow: 3.20mm	0.50 - 1.0	%	Internal method
Water Absorption			
24 hr	0.060	%	ASTM D570
Saturated, 23°C	0.26	%	ISO 62
Equilibrium, 23°C, 50% RH	0.080	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	118		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ⁷	9300	MPa	ASTM D638
--	9300	MPa	ISO 527-2/1
Tensile Strength			
Yield ⁸	120	MPa	ASTM D638

Yield	125	MPa	ISO 527-2/5
Fracture ⁹	120	MPa	ASTM D638
Fracture	125	MPa	ISO 527-2/5
Tensile Elongation			
Yield ¹⁰	3.0	%	ASTM D638
Yield	2.0	%	ISO 527-2/5
Fracture ¹¹	3.0	%	ASTM D638
Fracture	2.0	%	ISO 527-2/5
Flexural Modulus			
50.0mm span ¹²	7580	MPa	ASTM D790
-- ¹³	8500	MPa	ISO 178
Flexural Stress			
--	195	MPa	ISO 178
Fracture, 50.0mm span ¹⁴	189	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹⁵			ISO 179/1eA
-30°C	5.0	kJ/m ²	ISO 179/1eA
23°C	5.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength ¹⁶			ISO 179/1eU
-30°C	45	kJ/m ²	ISO 179/1eU
23°C	45	kJ/m ²	ISO 179/1eU
Notched Izod Impact			
-30°C	80	J/m	ASTM D256
23°C	85	J/m	ASTM D256
-30°C ¹⁷	7.0	kJ/m ²	ISO 180/1A
23°C ¹⁸	8.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	800	J/m	ASTM D4812
-30°C ¹⁹	45	kJ/m ²	ISO 180/1U
23°C ²⁰	45	kJ/m ²	ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	8.00	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	220	°C	ASTM D648
0.45 MPa, unannealed, 6.40mm	216	°C	ASTM D648
0.45 MPa, unannealed, 64.0mm span ²¹	217	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 3.20mm	203	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ²²	204	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	215	°C	ASTM D1525, ISO 306/B50, ISO 306/B120 ²³
--	223	°C	ISO 306/A50

Linear thermal expansion coefficient			ASTM E831, ISO 11359-2
Flow: -40 to 40°C	2.5E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Lateral: -40 to 40°C	1.2E-4	cm/cm/°C	ASTM E831, ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 3.2E+16	ohms·cm	ASTM D257
Dielectric Strength			ASTM D149
1.60 mm, in Oil	25	kV/mm	ASTM D149
3.20 mm, in Air	19	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
100 Hz	3.80		ASTM D150
1 MHz	3.70		ASTM D150
Dissipation Factor			ASTM D150
100 Hz	2.0E-3		ASTM D150
1 MHz	0.020		ASTM D150
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 - 4.0	hr	
Drying Time, Maximum	12	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 - 80	%	
Rear Temperature	238 - 254	°C	
Middle Temperature	243 - 260	°C	
Front Temperature	249 - 266	°C	
Nozzle Temperature	243 - 260	°C	
Processing (Melt) Temp	249 - 266	°C	
Mold Temperature	65.6 - 87.8	°C	
Back Pressure	0.345 - 0.689	MPa	
Screw Speed	50 - 80	rpm	
Vent Depth	0.025 - 0.038	mm	
NOTE			
1.	Tensile Bar		
2.	3.2 to 4.6 mm		
3.	1.5 to 3.2 mm		
4.	Tensile Bar		
5.	3.2-4.6 mm		
6.	1.5 to 3.2 mm		
7.	5.0 mm/min		
8.	Type 1, 5.0 mm/min		
9.	Type 1, 5.0 mm/min		
10.	Type 1, 5.0 mm/min		
11.	Type 1, 5.0 mm/min		
12.	1.3 mm/min		

13.	2.0 mm/min
14.	1.3 mm/min
15.	80*10*4 sp=62mm
16.	80*10*4 sp=62mm
17.	80*10*4
18.	80*10*4
19.	80*10*4
20.	80*10*4
21.	80*10*4 mm
22.	80*10*4 mm
23.	标准 B (120°C/h), 载荷2 (50N)

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