

VALOX™ HX420HP resin

Polybutylene Terephthalate

SABIC Innovative Plastics

Message:

Medium Flow, 30% Glass filled, Polybutylene Terephthalate (PBT) resin. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI), food contact compliant. Available in limited colors.

General Information			
Filler / Reinforcement	Glass fiber reinforced material, 30% filler by weight		
Features	Medium liquidity		
	Biocompatibility		
	Compliance of Food Exposure		
Uses	Drug		
	Medical/nursing supplies		
Agency Ratings	ISO 10993		
	USP Class VI		
RoHS Compliance	RoHS compliance		
Appearance	Available colors		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.53	g/cm ³	ASTM D792, ISO 1183
Specific Volume	0.658	cm ³ /g	ASTM D792
Melt Mass-Flow Rate (MFR) (250°C/2.16 kg)	26	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	20.0	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal method
Flow ¹	0.50 - 0.80	%	Internal method
Flow ²	0.30 - 0.50	%	Internal method
Flow: 3.20mm	0.30 - 0.80	%	Internal method
Transverse flow ³	0.60 - 0.90	%	Internal method
Transverse flow ⁴	0.40 - 0.60	%	Internal method
Water Absorption			
24 hr	0.060	%	ASTM D570
Saturated, 23°C	0.26	%	ISO 62
Equilibrium, 23°C, 50% RH	0.060	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	118		ASTM D785

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ⁵	9300	MPa	ASTM D638
--	9300	MPa	ISO 527-2/1
Tensile Strength			
Yield ⁶	120	MPa	ASTM D638
Yield	125	MPa	ISO 527-2/5
Fracture ⁷	120	MPa	ASTM D638
Fracture	125	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁸	3.0	%	ASTM D638
Yield	2.0	%	ISO 527-2/5
Fracture ⁹	3.0	%	ASTM D638
Fracture	2.0	%	ISO 527-2/5
Flexural Modulus			
50.0mm span ¹⁰	7580	MPa	ASTM D790
-- ¹¹	8500	MPa	ISO 178
Flexural Stress			
--	195	MPa	ISO 178
Fracture, 50.0mm span ¹²	189	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹³ (23°C)	5.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	80	J/m	ASTM D256
23°C	85	J/m	ASTM D256
-30°C ¹⁴	7.0	kJ/m ²	ISO 180/1A
23°C ¹⁵	8.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	800	J/m	ASTM D4812
-30°C ¹⁶	45	kJ/m ²	ISO 180/1U
23°C ¹⁷	45	kJ/m ²	ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	10.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 6.40mm	216	°C	ASTM D648
1.8 MPa, unannealed, 6.40mm	207	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹⁸	200	°C	ISO 75-2/ Af
Vicat Softening Temperature			
--	215	°C	ASTM D1525, ISO 306/B50 ¹⁹
--	220	°C	ISO 306/B120
Linear thermal expansion coefficient			

Flow: -40 to 40°C	2.5E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Flow: 60 to 138°C	2.5E-5	cm/cm/°C	ASTM E831
Lateral: -40 to 40°C	1.2E-4	cm/cm/°C	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.	3.2 to 4.6 mm		
2.	1.5 to 3.2 mm		
3.	3.2-4.6 mm		
4.	1.5 to 3.2 mm		
5.	5.0 mm/min		
6.	Type 1, 5.0 mm/min		
7.	Type 1, 5.0 mm/min		
8.	Type 1, 5.0 mm/min		
9.	Type 1, 5.0 mm/min		
10.	1.3 mm/min		
11.	2.0 mm/min		
12.	1.3 mm/min		

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

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