SABIC VALOX™ PBT 420HP物性表

属性	典型值	UNITS	测试手段
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	120	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	120	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	3	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D638
Tensile Modulus, 5 mm/min	9300	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	189	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	7580	MPa	ASTM D790
Hardness, Rockwell R	118	-	ASTM D785
Tensile Stress, yield, 5 mm/min	125	MPa	ISO 527
Tensile Stress, break, 5 mm/min	125	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2	%	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	9300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	195	MPa	ISO 178
Flexural Modulus, 2 mm/min	8500	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	801	J/m	ASTM D4812
Izod Impact, notched, 23°C	85	J/m	ASTM D256
Izod Impact, notched, -30°C	80	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	8	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	45	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	45	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	8	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	7	kJ/m²	ISO 180/1A

Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	45	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	45	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	215	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	220	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	203	°C	ASTM D648
HDT, 0.45 MPa, 6.4 mm, unannealed	215	°C	ASTM D648
CTE, -40°C to 40°C, flow	2.52E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	1.2E-04	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	2.52E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	1.2E-04	1/°C	ISO 11359-2
Vicat Softening Temp, Rate A/50	223	°C	ISO 306
Vicat Softening Temp, Rate B/50	215	°C	ISO 306
Vicat Softening Temp, Rate B/120	215	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	217	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	204	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.53	-	ASTM D792
Specific Volume	0.65	cm³/g	ASTM D792
Filler Content	30	%	ASTM D229
Water Absorption, (23°C/24hrs)	0.06	%	ASTM D570
Mold Shrinkage on Tensile Bar, flow	0.3-0.7	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.3-0.8	%	SABIC method
Mold Shrinkage, flow, 1.5-3.2 mm	0.3-0.5	%	SABIC method
Mold Shrinkage, flow, 3.2-4.6 mm	0.5-0.8	%	SABIC method
Mold Shrinkage on Tensile Bar, xflow	0.5-1	%	SABIC method

Mold Shrinkage, xflow, 3.2 mm	0.5-1	%	SABIC method
Mold Shrinkage, xflow, 1.5-3.2 mm	0.4-0.6	%	SABIC method
Mold Shrinkage, xflow, 3.2-4.6 mm	0.6-0.9	%	SABIC method
Melt Flow Rate, 250°C/2.16 kgf	17	g/10 min	ASTM D1238
Density	1.53	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.26	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.08	%	ISO 62
Melt Volume Rate, MVR at 250°C/2.16 kg	13	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	>3.2E+16	Ω.cm	ASTM D257
Dielectric Strength, in air, 3.2 mm	18.7	kV/mm	ASTM D149
Dielectric Strength, in oil, 1.6 mm	24.8	kV/mm	ASTM D149
Relative Permittivity, 100 Hz	3.8	-	ASTM D150
Relative Permittivity, 1 MHz	3.7	-	ASTM D150
Dissipation Factor, 100 Hz	0.002	-	ASTM D150
Dissipation Factor, 1 MHz	0.02	-	ASTM D150
FLAME CHARACTERISTICS			
UL Yellow Card Link	E121562-220792	-	-
Injection Molding			
Drying Temperature	120	°C	
Drying Time	3-4	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250-265	°C	
Nozzle Temperature	245-260	°C	
Front - Zone 3 Temperature	250-265	°C	
Middle - Zone 2 Temperature	245-260	°C	
Rear - Zone 1 Temperature	240-255	°C	
Mold Temperature	65-90	°C	
Back Pressure	0.3-0.7	MPa	
Screw Speed	50-80	rpm	
Shot to Cylinder Size	40-80	%	
Vent Depth	0.025-0.038	mm	

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