

VALOX™ 311 resin

Polybutylene Terephthalate

SABIC Innovative Plastics

Message:

Unreinforced, improved resistance to UV. Medium viscosity.

General Information			
Features	Good UV Resistance		
	Medium Viscosity		
Processing Method	Injection Molding		
Multi-Point Data	Shear DMA (ASTM D4065)		
	Viscosity vs. Shear Rate (ASTM D3835)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.31	g/cm ³	ASTM D792
Specific Volume	0.770	cm ³ /g	ASTM D792
Molding Shrinkage			Internal Method
Flow ¹	0.90 to 1.6	%	
Flow ²	1.5 to 2.3	%	
Across Flow ³	1.0 to 1.7	%	
Across Flow ⁴	1.6 to 2.4	%	
Water Absorption (24 hr)	0.080	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	117		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength ⁵ (Yield)	51.7	MPa	ASTM D638
Tensile Elongation ⁶ (Break)	300	%	ASTM D638
Flexural Modulus ⁷ (50.0 mm Span)	2340	MPa	ASTM D790
Flexural Strength ⁸ (Yield, 50.0 mm Span)	82.7	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	53	J/m	ASTM D256
Unnotched Izod Impact (23°C)	1600	J/m	ASTM D4812
Gardner Impact ⁹ (23°C)	40.7	J	ASTM D3029
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed, 6.40 mm	154	°C	
1.8 MPa, Unannealed, 6.40 mm	54.4	°C	
CLTE - Flow			ASTM E831
-40 to 40°C	8.1E-5	cm/cm/°C	

60 to 138°C	1.4E-4	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 4.0E+16	ohms·cm	ASTM D257
Dielectric Strength			ASTM D149
1.60 mm, in Oil	23	kV/mm	
3.20 mm, in Air	16	kV/mm	
Dielectric Constant			ASTM D150
100 Hz	3.30		
1 MHz	3.10		
Dissipation Factor			ASTM D150
100 Hz	2.0E-3		
1 MHz	0.020		
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	12	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 80	%	
Rear Temperature	232 to 249	°C	
Middle Temperature	238 to 254	°C	
Front Temperature	243 to 260	°C	
Nozzle Temperature	238 to 254	°C	
Processing (Melt) Temp	243 to 260	°C	
Mold Temperature	48.9 to 76.7	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	50 to 100	rpm	
Vent Depth	0.013 to 0.025	mm	
NOTE			
1.	0.75 to 2.3 mm		
2.	2.3 to 4.6 mm		
3.	0.75 to 2.3 mm		
4.	2.3 to 4.6 mm		
5.	Type I, 50 mm/min		
6.	Type I, 50 mm/min		
7.	1.3 mm/min		
8.	1.3 mm/min		
9.	Modified		

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