

SABIC Innovative Plastics Valox® 311 PBT

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT)

Material Notes:

Unreinforced, improved resistance to UV. Medium viscosity.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-311-PBT.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.31 g/cc	1.31 g/cc	ASTM D792
Water Absorption	0.080 %	0.080 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Linear Mold Shrinkage, Flow	0.0090 - 0.016 cm/cm	0.0090 - 0.016 in/in	SABIC Method
	@Thickness 0.750 - 2.30 mm	@Thickness 0.0295 - 0.0906 in	
	0.015 - 0.023 cm/cm	0.015 - 0.023 in/in	SABIC Method
	@Thickness 2.30 - 4.60 mm	@Thickness 0.0906 - 0.181 in	
Linear Mold Shrinkage, Transverse	0.010 - 0.017 cm/cm	0.010 - 0.017 in/in	SABIC Method
	@Thickness 0.750 - 2.30 mm	@Thickness 0.0295 - 0.0906 in	
	0.016 - 0.024 cm/cm	0.016 - 0.024 in/in	SABIC Method
	@Thickness 2.30 - 4.60 mm	@Thickness 0.0906 - 0.181 in	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	117	117	ASTM D785
Tensile Strength, Yield	51.0 MPa	7400 psi	Type I, 50 mm/min; ASTM D638
Elongation at Break	300 %	300 %	Type I, 50 mm/min; ASTM D638
Flexural Yield Strength	82.0 MPa	11900 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.34 GPa	339 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.530 J/cm	0.993 ft-lb/in	ASTM D256
Izod Impact, Unnotched	16.02 J/cm	30.01 ft-lb/in	ASTM D4812
Gardner Impact	40.0 J	29.5 ft-lb	ASTM D3029

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	81.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	45.0 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $\text{Å}^\circ\text{C}$	@Temperature -40.0 - 104 $\text{Å}^\circ\text{F}$	
	139 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	77.2 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ASTM E 831
	@Temperature 60.0 - 138 $\text{Å}^\circ\text{C}$	@Temperature 140 - 280 $\text{Å}^\circ\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	154 $\text{Å}^\circ\text{C}$	309 $\text{Å}^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	54.0 $\text{Å}^\circ\text{C}$	129 $\text{Å}^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 4.00\text{e}+16$ ohm-cm	$\geq 4.00\text{e}+16$ ohm-cm	ASTM D257
Dielectric Constant	3.1	3.1	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.3	3.3	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	15.7 kV/mm	399 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	23.2 kV/mm	589 kV/in	in oil; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0020	0.0020	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.020	0.020	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Descriptive Properties	Value	Comments
Specific Volume	0.76cm ³ /g	ASTM D792

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