

+135-3858-6433 (GuangDong)
+188-1699-6168 (ShangHai)
+852-6957-5415 (HongKong)

SABIC Innovative Plastics Valox® 414 PBT (Asia Pacific)

Material Notes: 40% GR, increased strength/stiffness vs unreinforced. Non-flame retardant. For appliance handles, spotlights, electric motors, pump housings etc.

This data was supplied by SABIC-IP for the Asia Pacific region.

Physical Properties	Metric	English	Comments
Specific Gravity	1.63 g/cc	1.63 g/cc	ASTM D 792
Water Absorption	0.050 % @Time 86400 sec	0.050 % @Time 24.0 hour	ASTM D 570
Linear Mold Shrinkage, Flow	0.0030 - 0.0040 cm/cm @Thickness 1.50 - 3.20 mm	0.0030 - 0.0040 in/in @Thickness 0.0591 - 0.126 in	SABIC Method
	0.0040 - 0.0050 cm/cm @Thickness 3.20 - 4.60 mm	0.0040 - 0.0050 in/in @Thickness 0.126 - 0.181 in	SABIC Method
Linear Mold Shrinkage, Transverse 	0.0040 - 0.0060 cm/cm @Thickness 1.50 - 3.20 mm	0.0040 - 0.0060 in/in @Thickness 0.0591 - 0.126 in	SABIC Method
	0.0060 - 0.0090 cm/cm @Thickness 3.20 - 4.60 mm	0.0060 - 0.0090 in/in @Thickness 0.126 - 0.181 in	SABIC Method

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	118	118	ASTM D 785
Tensile Strength at Break	127 MPa	18400 psi	Type I, 5 mm/min; ASTM D 638
Flexural Strength	199 MPa	28900 psi	brk, 1.3 mm/min, 50 mm span; ASTM D 790
Flexural Modulus	8.27 GPa	1200 ksi	1.3 mm/min, 50 mm span; ASTM D 790
Izod Impact, Notched	0.960 J/cm @Temperature 23.0 °C	1.80 ft-lb/in @Temperature 73.4 °F	ASTM D 256
Izod Impact, Unnotched	9.61 J/cm @Temperature 23.0 °C	18.0 ft-lb/in @Temperature 73.4 °F	ASTM D 4812

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 2.50e+16 ohm-cm	>= 2.50e+16 ohm-cm	ASTM D 257
Dielectric Constant 	4.0	4.0	ASTM D 150

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	@Frequency 100 Hz	@Frequency 100 Hz	
	4.0	4.0	ASTM D 150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength 	21.9 kV/mm	556 kV/in	in air; ASTM D 149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	26.4 kV/mm	671 kV/in	in oil; ASTM D 149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor 	0.0020	0.0020	ASTM D 150
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.020	0.020	ASTM D 150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow 	27.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	15.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^\circ\text{C}$	@Temperature -40.0 - 104 $^\circ\text{F}$	
	27.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	15.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature 60.0 - 138 $^\circ\text{C}$	@Temperature 140 - 280 $^\circ\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	215 $^\circ\text{C}$	419 $^\circ\text{F}$	unannealed; ASTM D 648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	204 $^\circ\text{C}$	399 $^\circ\text{F}$	unannealed; ASTM D 648
	@Thickness 6.40 mm	@Thickness 0.252 in	

Descriptive Properties			
Specific Volume, cm^3/g		0.61	ASTM D 792