

SABIC Innovative Plastics Valox® 310SE0 PBT

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

Material Notes:

VALOX 310SE0 is an unreinforced, flame retardant PBT injection moulding resin. Applications: electrical industry, bobbins, keyboard, switches and switch components and appliance housings.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-310SE0-PBT.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.40 g/cc	1.40 g/cc	ASTM D792
Density	1.40 g/cc	0.0506 lb/in ³	ISO 1183
Moisture Absorption	0.0800 %	0.0800 %	23Â°C / 50% RH; ISO 62
Water Absorption at Saturation	0.36 %	0.36 %	ISO 62
Linear Mold Shrinkage, Flow	0.011 - 0.018 cm/cm	0.011 - 0.018 in/in	on Tensile Bar; SABIC Method
	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	
	0.015 - 0.023 cm/cm	0.015 - 0.023 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	SABIC Method
	0.0090 - 0.019 cm/cm	0.0090 - 0.019 in/in	
	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	SABIC Method
	0.016 - 0.024 cm/cm	0.016 - 0.024 in/in	
	@Thickness 2.30 - 4.60 mm	@Thickness 0.0906 - 0.181 in	SABIC Method
Melt Flow	8.6 g/10 min	8.6 g/10 min	ASTM D1238
	@Load 2.16 kg, Temperature 250 Â°C	@Load 4.76 lb, Temperature 482 Â°F	
Melt Index of Compound	8.0 g/10 min	8.0 g/10 min	MVR [cm ³ /10 min]; ISO 1133
	@Load 2.16 kg, Temperature 250 Â°C	@Load 4.76 lb, Temperature 482 Â°F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ISO 2039-2
Hardness, H358/30	105 MPa	15200 psi	ISO 2039-1
Tensile Strength at Break	40.0 MPa	5800 psi	50 mm/min; ISO 527
	58.0 MPa	8410 psi	Type I, 50 mm/min; ASTM D638
Tensile Strength, Yield	55.0 MPa	7980 psi	50 mm/min; ISO 527
	58.0 MPa	8410 psi	Type I, 50 mm/min; ASTM D638
Elongation at Break	20 %	20 %	Type I, 50 mm/min; ASTM D638
	20 %	20 %	50 mm/min; ISO 527
Elongation at Yield	6.0 %	6.0 %	50 mm/min; ISO 527
	20 %	20 %	Type I, 50 mm/min; ASTM D638
Tensile Modulus	2.80 GPa	406 ksi	1 mm/min; ISO 527
	2.82 GPa	409 ksi	5 mm/min; ASTM D638
Flexural Yield Strength	90.0 MPa	13100 psi	2 mm/min; ISO 178
	101 MPa	14600 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.60 GPa	377 ksi	2 mm/min; ISO 178
	2.62 GPa	380 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.370 J/cm	0.693 ft-lb/in	ASTM D256
	0.220 J/cm	0.412 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched	16.02 J/cm	30.01 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	5.00 kJ/mÂ²	2.38 ft-lb/inÂ²	80*10*4; ISO 180/1A
	3.00 kJ/mÂ²	1.43 ft-lb/inÂ²	80*10*4; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched (ISO)	NB	NB	80*10*4; ISO 180/1U
	NB	NB	
	@Temperature -30.0	@Temperature -22.0	80*10*4; ISO 180/1U

Mechanical Properties	°C Metric	°F English	Comments
Charpy Impact Unnotched	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	0.400 J/cmÂ²	1.90 ft-lb/inÂ²	ISO 179/2C
	0.800 J/cmÂ²	3.81 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.400 J/cmÂ² @Temperature -30.0 °C	1.90 ft-lb/inÂ² @Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	200 J @Temperature 23.0 °C	148 ft-lb @Temperature 73.4 °F	ASTM D3763
Taber Abrasion, mg/1000 Cycles	19	19	CS-17, 1 kg; SABIC Method

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	76.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	42.2 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ISO 11359-2
	79.2 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	44.0 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ASTME 831
	100 Âµm/m-Â°C @Temperature 23.0 - 60.0 Â°C	55.6 Âµin/in-Â°F @Temperature 73.4 - 140 Â°F	ISO 11359-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	2.8 @Frequency 1.00e+6 Hz	2.8 @Frequency 1.00e+6 Hz	IEC 60250
	2.9 @Frequency 50.0 - 60.0 Hz	2.9 @Frequency 50.0 - 60.0 Hz	IEC 60250

Electrical Properties	^{3.1} Metric	^{3.1} English	Comments
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	15.0 kV/mm	381 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
	18.0 kV/mm	457 kV/in	short time; IEC 60243-1
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	18.4 kV/mm	467 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	22.0 kV/mm	559 kV/in	in oil; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	24.0 kV/mm	610 kV/in	in oil; IEC 60243-1
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	31.0 kV/mm	787 kV/in	in oil; IEC 60243-1
	@Thickness 0.800 mm	@Thickness 0.0315 in	
Dissipation Factor	0.0010	0.0010	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	0.0020	0.0020	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.010	0.010	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Arc Resistance	60 - 120 sec	60 - 120 sec	Tungsten; ASTM D495
	60 - 120 sec	60 - 120 sec	
Comparative Tracking Index	>= 100 V	>= 100 V	IEC 60112
	175 V	175 V	
	175 - 250 V	175 - 250 V	UL 746A
	30 - 60 sec	30 - 60 sec	
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL 746A
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	>= 150 mm/min	>= 5.91 in/min	UL 746A

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