

## SABIC Innovative Plastics Valox<sup>®</sup> 451E PBT (Europe-Africa-Middle East)

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

### Material Notes:

VALOX 451E is 20% glass reinforced, flame retardant PBT injection moulding resin.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Valox-451E-PBT-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-451E-PBT-Europe-Africa-Middle-East.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.54 g/cc	1.54 g/cc	ASTM D792
Density	1.54 g/cc	0.0556 lb/in <sup>3</sup>	ISO 1183
Filler Content	20 %	20 %	ASTM D229
Moisture Absorption	0.0800 %	0.0800 %	23 <sup>°</sup> C / 50% RH; ISO 62
Water Absorption at Saturation	0.27 %	0.27 %	ISO 62
Viscosity	100000 cP	100000 cP	Melt Viscosity, 260 <sup>°</sup> C, 1500 sec-1; ISO 11443
Linear Mold Shrinkage, Flow	0.0040 - 0.0080 cm/cm	0.0040 - 0.0080 in/in	on Tensile Bar; SABIC Method
	0.0040 - 0.010 cm/cm @Thickness 3.20 mm	0.0040 - 0.010 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0060 - 0.0090 cm/cm	0.0060 - 0.0090 in/in	on Tensile Bar; SABIC Method
	0.0080 - 0.012 cm/cm @Thickness 3.20 mm	0.0080 - 0.012 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	17 g/10 min	17 g/10 min	ASTM D1238
	@Load 2.16 kg, Temperature 250 <sup>°</sup> C	@Load 4.76 lb, Temperature 482 <sup>°</sup> F	
	110 g/10 min	110 g/10 min	ASTM D1238
	@Load 5.00 kg, Temperature 266 <sup>°</sup> C	@Load 11.0 lb, Temperature 511 <sup>°</sup> F	
Melt Index of Compound	12 g/10 min	12 g/10 min	MVR [cm <sup>3</sup> /10 min]; ISO 1133
	@Load 2.16 kg, Temperature 250 <sup>°</sup> C	@Load 4.76 lb, Temperature 482 <sup>°</sup> F	
	55 g/10 min	55 g/10 min	MVR [cm <sup>3</sup> /10 min]; ISO 1133
	@Load 5.00 kg, Temperature 250 <sup>°</sup> C	@Load 11.0 lb, Temperature 482 <sup>°</sup> F	
	85 g/10 min	85 g/10 min	

Physical Properties	Metric	English	Comments
	@Load 5.00 kg, Temperature 265 Å°C	@Load 11.0 lb, Temperature 509 Å°F	MVR (cm <sup>3</sup> /10 min); ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ISO 2039-2
Hardness, H358/30	117 MPa	17000 psi	ISO 2039-1
Tensile Strength at Break	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D638
	110 MPa	16000 psi	5 mm/min; ISO 527
Tensile Strength, Yield	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D638
	110 MPa	16000 psi	5 mm/min; ISO 527
Elongation at Break	2.0 %	2.0 %	Type I, 5 mm/min; ASTM D638
	2.0 %	2.0 %	5 mm/min; ISO 527
	3.0 %	3.0 %	Flexural Strain, break, 2 mm/min; ISO 178
Elongation at Yield	2.0 %	2.0 %	Type I, 5 mm/min; ASTM D638
	2.0 %	2.0 %	5 mm/min; ISO 527
Tensile Modulus	7.90 GPa	1150 ksi	5 mm/min; ASTM D638
	8.00 GPa	1160 ksi	1 mm/min; ISO 527
Flexural Strength	154 MPa	22300 psi	1.3 mm/min, 50 mm span; ASTM D790
	160 MPa	23200 psi	2 mm/min; ISO 178
Flexural Yield Strength	154 MPa	22300 psi	1.3 mm/min, 50 mm span; ASTM D790
	160 MPa	23200 psi	2 mm/min; ISO 178
Flexural Modulus	6.10 GPa	885 ksi	1.3 mm/min, 50 mm span; ASTM D790
	6.60 GPa	957 ksi	2 mm/min; ISO 178
Izod Impact, Notched	0.600 J/cm	1.12 ft-lb/in	ASTM D256
	0.600 J/cm	1.12 ft-lb/in	ASTM D256
	@Temperature 0.000 Å°C	@Temperature 32.0 Å°F	
	0.600 J/cm	1.12 ft-lb/in	ASTM D256
	@Temperature -30.0	@Temperature -22.0	

Mechanical Properties	°C Metric	°F English	Comments
Izod Impact, Unnotched	3.50 J/cm	6.56 ft-lb/in	ASTM D4812
	3.20 J/cm	5.99 ft-lb/in	ASTM D4812
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Notched (ISO)	6.00 kJ/m <sup>2</sup>	2.86 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1A
	6.00 kJ/m <sup>2</sup>	2.86 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1A
	@Temperature 0.000 °C	@Temperature 32.0 °F	
	6.00 kJ/m <sup>2</sup>	2.86 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched (ISO)	25.0 kJ/m <sup>2</sup>	11.9 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1U
	25.0 kJ/m <sup>2</sup>	11.9 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	3.00 J/cm <sup>2</sup>	14.3 ft-lb/in <sup>2</sup>	ISO 179/2C
	3.50 J/cm <sup>2</sup>	16.7 ft-lb/in <sup>2</sup>	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	2.80 J/cm <sup>2</sup>	13.3 ft-lb/in <sup>2</sup>	ISO 179/2C
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	4.50 J/cm <sup>2</sup>	21.4 ft-lb/in <sup>2</sup>	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	0.700 J/cm <sup>2</sup>	3.33 ft-lb/in <sup>2</sup>	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.700 J/cm <sup>2</sup>	3.33 ft-lb/in <sup>2</sup>	ISO 179/2C
	0.500 J/cm <sup>2</sup>	2.38 ft-lb/in <sup>2</sup>	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.700 J/cm <sup>2</sup>	3.33 ft-lb/in <sup>2</sup>	ISO 179/2C
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Dart Drop, Total Energy	6.00 J	4.43 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	23.8 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	13.2 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 150 $\text{Å}^\circ\text{C}$	@Temperature 73.4 - 302 $\text{Å}^\circ\text{F}$	
	26.1 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	14.5 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ISO 11359-2
	@Temperature -40.0 - 40.0 $\text{Å}^\circ\text{C}$	@Temperature -40.0 - 104 $\text{Å}^\circ\text{F}$	
	30.9 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	17.2 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $\text{Å}^\circ\text{C}$	@Temperature -40.0 - 104 $\text{Å}^\circ\text{F}$	

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00\text{e}+15$ ohm-cm	$\geq 1.00\text{e}+15$ ohm-cm	ASTM D257
	$\geq 1.00\text{e}+15$ ohm-cm	$\geq 1.00\text{e}+15$ ohm-cm	IEC 60093
Surface Resistance	$\geq 1.00\text{e}+15$ ohm	$\geq 1.00\text{e}+15$ ohm	ROA; IEC 60093
Dielectric Constant	3.3	3.3	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.3	3.3	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	15.0 kV/mm	381 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
	21.0 kV/mm	533 kV/in	in oil; IEC 60243-1
@Thickness 1.60 mm	@Thickness 0.0630 in		
	22.0 kV/mm	559 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	
	0.010	0.010	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	175 V	175 V	IEC 60112

## **Contact Songhan Plastic Technology Co.,Ltd.**

**Website : [www.lookpolymers.com](http://www.lookpolymers.com)**

**Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)**

**Tel : +86 021-51131842**

**Mobile : +86 13061808058**

**Skype : lookpolymers**

**Address : United North Road 215,Fengxian District, Shanghai City,China**