

## SABIC Innovative Plastics Valox® DR51 PBT (Europe-Africa-Middle East)

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

### Material Notes:

VALOX DR51 is a 15% glass fiber reinforced PBT injection moulding resin with excellent mechanical, thermal and electrical performance.

Applications: spotlights, appliance housings, handles.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Valox-DR51-PBT-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-DR51-PBT-Europe-Africa-Middle-East.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.45 g/cc	1.45 g/cc	ASTM D792
Density	1.45 g/cc	0.0524 lb/in <sup>3</sup>	ISO 1183
Filler Content	17 %	17 %	ASTM D229
Water Absorption	0.070 % @Time 86400 sec	0.070 % @Time 24.0 hour	ASTM D570
Moisture Absorption	0.0700 %	0.0700 %	23Â°C / 50% RH; ISO 62
Water Absorption at Saturation	0.20 %	0.20 %	ISO 62
Viscosity	170000 cP	170000 cP	Melt Viscosity, 260Â°C, 1500 sec-1; ISO 11443
Linear Mold Shrinkage, Flow	0.0050 - 0.0080 cm/cm	0.0050 - 0.0080 in/in	on Tensile Bar; SABIC Method
	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
Linear Mold Shrinkage, Transverse	0.0060 - 0.0090 cm/cm	0.0060 - 0.0090 in/in	on Tensile Bar; SABIC Method
	0.0050 - 0.0080 cm/cm @Thickness 1.50 - 3.20 mm	0.0050 - 0.0080 in/in @Thickness 0.0591 - 0.126 in	SABIC Method
	0.0080 - 0.011 cm/cm @Thickness 3.20 - 4.60 mm	0.0080 - 0.011 in/in @Thickness 0.126 - 0.181 in	SABIC Method
Melt Flow	18 g/10 min @Load 2.16 kg, Temperature 250 Â°C	18 g/10 min @Load 4.76 lb, Temperature 482 Â°F	ISO 1133

Physical Properties	Metric <small>0 min</small>	English <small>min</small>	Comments
	@Load 5.00 kg, Temperature 265 Â°C	@Load 11.0 lb, Temperature 509 Â°F	ASTM D1238
Melt Index of Compound	15 g/10 min	15 g/10 min	MVR [cm <sup>3</sup> /10 min]; ISO 1133
	@Load 2.16 kg, Temperature 250 Â°C	@Load 4.76 lb, Temperature 482 Â°F	
	43 g/10 min	43 g/10 min	MVR [cm <sup>3</sup> /10 min]; ISO 1133
	@Load 5.00 kg, Temperature 250 Â°C	@Load 11.0 lb, Temperature 482 Â°F	
	65 g/10 min	65 g/10 min	MVR [cm <sup>3</sup> /10 min]; ISO 1133
	@Load 5.00 kg, Temperature 265 Â°C	@Load 11.0 lb, Temperature 509 Â°F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	118	118	ASTM D785
	120	120	ISO 2039-2
Hardness, H358/30	100 MPa	14500 psi	ISO 2039-1
Tensile Strength at Break	90.0 MPa	13100 psi	Type I, 5 mm/min; ASTM D638
	100 MPa	14500 psi	5 mm/min; ISO 527
Tensile Strength, Yield	90.0 MPa	13100 psi	Type I, 5 mm/min; ASTM D638
	95.0 MPa	13800 psi	5 mm/min; ISO 527
Elongation at Break	3.0 %	3.0 %	Type I, 5 mm/min; ASTM D638
	3.0 %	3.0 %	5 mm/min; ISO 527
	5.0 %	5.0 %	Flexural Strain, break, 2 mm/min; ISO 178
Elongation at Yield	3.0 %	3.0 %	Type I, 5 mm/min; ASTM D638
	3.0 %	3.0 %	5 mm/min; ISO 527
Tensile Modulus	5.90 GPa	856 ksi	5 mm/min; ASTM D638
	6.00 GPa	870 ksi	1 mm/min; ISO 527
Flexural Strength	140 MPa	20300 psi	1.3 mm/min, 50 mm span; ASTM D790
	155 MPa	22500 psi	2 mm/min; ISO 178
Flexural Yield Strength	140 MPa	20300 psi	1.3 mm/min, 50 mm span; ASTM

Mechanical Properties	Metric	English	D790 Comments
	150 MPa	21800 psi	2 mm/min; ISO 178
Flexural Modulus	4.50 GPa	653 ksi	1.3 mm/min, 50 mm span; ASTM D790
	5.10 GPa	740 ksi	2 mm/min; ISO 178
Izod Impact, Notched	0.400 J/cm	0.749 ft-lb/in	ASTM D256
	0.400 J/cm	0.749 ft-lb/in	ASTM D256
	@Temperature 0.000 Å°C	@Temperature 32.0 Å°F	
	0.400 J/cm	0.749 ft-lb/in	ASTM D256
	@Temperature -30.0 Å°C	@Temperature -22.0 Å°F	
Izod Impact, Unnotched	3.30 J/cm	6.18 ft-lb/in	ASTM D4812
	3.30 J/cm	6.18 ft-lb/in	ASTM D4812
	@Temperature -30.0 Å°C	@Temperature -22.0 Å°F	
Izod Impact, Notched (ISO)	4.00 kJ/mÅ²	1.90 ft-lb/inÅ²	80*10*4; ISO 180/1A
	4.00 kJ/mÅ²	1.90 ft-lb/inÅ²	80*10*4; ISO 180/1A
	@Temperature 0.000 Å°C	@Temperature 32.0 Å°F	
	4.00 kJ/mÅ²	1.90 ft-lb/inÅ²	80*10*4; ISO 180/1A
	@Temperature -20.0 Å°C	@Temperature -4.00 Å°F	
	4.00 kJ/mÅ²	1.90 ft-lb/inÅ²	80*10*4; ISO 180/1A
	@Temperature -30.0 Å°C	@Temperature -22.0 Å°F	
	4.00 kJ/mÅ²	1.90 ft-lb/inÅ²	80*10*4; ISO 180/1A
	@Temperature -40.0 Å°C	@Temperature -40.0 Å°F	
Izod Impact, Unnotched (ISO)	30.0 kJ/mÅ²	14.3 ft-lb/inÅ²	80*10*4; ISO 180/1U
	30.0 kJ/mÅ²	14.3 ft-lb/inÅ²	80*10*4; ISO 180/1U
	@Temperature -30.0 Å°C	@Temperature -22.0 Å°F	
Charpy Impact Unnotched	3.00 J/cmÅ²	14.3 ft-lb/inÅ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	3.00 J/cmÅ²	14.3 ft-lb/inÅ²	ISO 179/2C

Mechanical Properties	Metric/cm <sup>2</sup>	English/lb/in <sup>2</sup>	Comments
	@Temperature -30.0 Å°C	@Temperature -22.0 Å°F	ISO 179/2C
	3.00 J/cm <sup>2</sup> @Temperature -30.0 Å°C	14.3 ft-lb/in <sup>2</sup> @Temperature -22.0 Å°F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	0.400 J/cm <sup>2</sup>	1.90 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
	0.400 J/cm <sup>2</sup> @Temperature -30.0 Å°C	1.90 ft-lb/in <sup>2</sup> @Temperature -22.0 Å°F	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.400 J/cm <sup>2</sup> @Temperature -30.0 Å°C	1.90 ft-lb/in <sup>2</sup> @Temperature -22.0 Å°F	ISO 179/2C
Taber Abrasion, mg/1000 Cycles	16	16	CS-17, 1 kg; SABIC Method

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	ASTM D257
	>= 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	2.9 @Frequency 1.00e+6 Hz	2.9 @Frequency 1.00e+6 Hz	IEC 60250
	3.0 @Frequency 50.0 - 60.0 Hz	3.0 @Frequency 50.0 - 60.0 Hz	IEC 60250
	3.4 @Frequency 1.00e+6 Hz	3.4 @Frequency 1.00e+6 Hz	ASTM D150
	3.6 @Frequency 100 Hz	3.6 @Frequency 100 Hz	ASTM D150
Dielectric Strength	18.0 kV/mm @Thickness 3.20 mm	457 kV/in @Thickness 0.126 in	in oil; IEC 60243-1
	19.6 kV/mm	498 kV/in	

Electrical Properties

Metric  
@ Thickness 3.20 mm

English  
@ Thickness 0.126 in

In air: ASTM D149  
Comments

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