

## SABIC Innovative Plastics Valox<sup>®</sup> 5031 PBT (Europe-Africa-Middle East)

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

### Material Notes:

VALOX 5031 is a 30% glass reinforced PBT+PC blend with low warpage characteristics. Applications: appliance handles, automotive doorhandles. This grade is a 508 with reduced warpage.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Valox-5031-PBT-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-5031-PBT-Europe-Africa-Middle-East.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.47 g/cc	1.47 g/cc	ASTM D792
Density	1.47 g/cc	0.0531 lb/in <sup>3</sup>	ISO 1183
Filler Content	30 %	30 %	ASTM D229
Moisture Absorption	0.0500 %	0.0500 %	23 <sup>°</sup> C / 50% RH; ISO 62
Water Absorption at Saturation	0.090 %	0.090 %	ISO 62
Viscosity	195000 cP	195000 cP	Melt Viscosity, 260 <sup>°</sup> C, 1500 sec-1; ISO 11443
Linear Mold Shrinkage, Flow	0.0030 - 0.0070 cm/cm	0.0030 - 0.0070 in/in	on Tensile Bar; SABIC Method
Linear Mold Shrinkage, Transverse	0.0050 - 0.0090 cm/cm	0.0050 - 0.0090 in/in	on Tensile Bar; SABIC Method
Melt Flow	25 g/10 min @Load 5.00 kg, Temperature 266 <sup>°</sup> C	25 g/10 min @Load 11.0 lb, Temperature 511 <sup>°</sup> F	ASTM D1238
Melt Index of Compound	7.0 g/10 min @Load 2.16 kg, Temperature 250 <sup>°</sup> C	7.0 g/10 min @Load 4.76 lb, Temperature 482 <sup>°</sup> F	MVR [cm <sup>3</sup> /10 min]; ISO 1133
	15 g/10 min @Load 5.00 kg, Temperature 250 <sup>°</sup> C	15 g/10 min @Load 11.0 lb, Temperature 482 <sup>°</sup> F	MVR [cm <sup>3</sup> /10 min]; ISO 1133
	23 g/10 min @Load 5.00 kg, Temperature 265 <sup>°</sup> C	23 g/10 min @Load 11.0 lb, Temperature 509 <sup>°</sup> 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	125 MPa	18100 psi	ISO 2039-1

Tensile Strength at Break Mechanical Properties	120 MPa Metric	17400 psi English	Type I, 5 mm/min; ASTM D638 Comments
	120 MPa	17400 psi	5 mm/min; ISO 527
Tensile Strength, Yield	120 MPa	17400 psi	Type I, 5 mm/min; ASTM D638
	120 MPa	17400 psi	5 mm/min; ISO 527
Elongation at Break	2.0 %	2.0 %	5 mm/min; ISO 527
	3.0 %	3.0 %	Flexural Strain, break, 2 mm/min; ISO 178
	3.0 %	3.0 %	Type I, 5 mm/min; ASTM D638
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	9.00 GPa	1310 ksi	1 mm/min; ISO 527
	9.30 GPa	1350 ksi	5 mm/min; ASTM D638
Flexural Strength	175 MPa	25400 psi	2 mm/min; ISO 178
	180 MPa	26100 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Yield Strength	175 MPa	25400 psi	2 mm/min; ISO 178
	180 MPa	26100 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	8.00 GPa	1160 ksi	2 mm/min; ISO 178
	8.30 GPa	1200 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	1.15 J/cm	2.15 ft-lb/in	ASTM D256
	1.05 J/cm	1.97 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	1.10 J/cm	2.06 ft-lb/in	ASTM D256
	@Temperature 0.000 °C	@Temperature 32.0 °F	
Izod Impact, Unnotched	8.00 J/cm	15.0 ft-lb/in	ASTM D4812
	8.00 J/cm	15.0 ft-lb/in	ASTM D4812
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Notched (ISO)	11.0 kJ/m <sup>2</sup>	5.23 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1A

Mechanical Properties	Metric	English	Comments
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	80*10*4; ISO 180/1A
	10.0 kJ/mÂ² @Temperature 0.000 Â°C	4.76 ft-lb/inÂ² @Temperature 32.0 Â°F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	45.0 kJ/mÂ²	21.4 ft-lb/inÂ²	80*10*4; ISO 180/1U
	45.0 kJ/mÂ² @Temperature -30.0 Â°C	21.4 ft-lb/inÂ² @Temperature -22.0 Â°F	80*10*4; ISO 180/1U
Charpy Impact Unnotched	4.50 J/cmÂ²	21.4 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	5.50 J/cmÂ²	26.2 ft-lb/inÂ²	ISO 179/2C
	4.50 J/cmÂ² @Temperature -30.0 Â°C	21.4 ft-lb/inÂ² @Temperature -22.0 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	5.50 J/cmÂ² @Temperature -30.0 Â°C	26.2 ft-lb/inÂ² @Temperature -22.0 Â°F	ISO 179/2C
Charpy Impact, Notched	0.700 J/cmÂ²	3.33 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	1.00 J/cmÂ²	4.76 ft-lb/inÂ²	ISO 179/2C
	0.600 J/cmÂ² @Temperature -30.0 Â°C	2.86 ft-lb/inÂ² @Temperature -22.0 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	1.00 J/cmÂ² @Temperature -30.0 Â°C	4.76 ft-lb/inÂ² @Temperature -22.0 Â°F	ISO 179/2C

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	18.4 Âµm/m-Â°C	10.2 Âµin/in-Â°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
	20.6 Âµm/m-Â°C	11.4 Âµin/in-Â°F	ISO 11359-2
	@Temperature 23.0 - 150 Â°C	@Temperature 73.4 - 302 Â°F	
	40.0 Âµm/m-Â°C	22.2 Âµin/in-Â°F	

Thermal Properties	Metric	English	ISO 11359-2 Comments
	@Temperature 23.0 - 60.0 Â°C	@Temperature 73.4 - 140 Â°F	
CTE, linear, Transverse to Flow	63.5 Âµm/m-Â°C	35.3 Âµin/in-Â°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
	80.0 Âµm/m-Â°C	44.4 Âµin/in-Â°F	ISO 11359-2
	@Temperature 23.0 - 60.0 Â°C	@Temperature 73.4 - 140 Â°F	
	107 Âµm/m-Â°C	59.4 Âµin/in-Â°F	ISO 11359-2
	@Temperature 23.0 - 150 Â°C	@Temperature 73.4 - 302 Â°F	

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	3.3	3.3	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	3.5	3.5	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.5	3.5	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	3.5	3.5	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	18.0 kV/mm	457 kV/in	in oil; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	18.0 kV/mm	457 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
	30.0 kV/mm	762 kV/in	in oil; IEC 60243-1
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	30.0 kV/mm	762 kV/in	in oil; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	

Electrical Properties	Metric	English	Comments
Dissipation Factor	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	IEC 60250
	0.013	0.013	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	IEC 60250
	0.013	0.013	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	ASTM D150
Comparative Tracking Index	200 V	200 V	IEC 60112

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