

## SABIC Innovative Plastics Valox<sup>®</sup> 4022 PBT (Europe-Africa-Middle East)

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

### Material Notes:

VALOX 4022 is a 20% high strength glass fibre reinforced PBT injection moulding resin, with improved mechanical properties. Applications : Spotlights, appliance housings and handles.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Valox-4022-PBT-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-4022-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	20 %	20 %	ASTM D229
Moisture Absorption	0.0300 %	0.0300 %	23 <sup>°</sup> C / 50% RH; ISO 62
Water Absorption at Saturation	0.15 %	0.15 %	ISO 62
Viscosity	140000 cP	140000 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	0.0040 - 0.010 cm/cm	0.0040 - 0.010 in/in	on Tensile Bar; SABIC Method
Melt Flow	40 g/10 min @Load 5.00 kg, Temperature 266 <sup>°</sup> C	40 g/10 min @Load 11.0 lb, Temperature 511 <sup>°</sup> F	ASTM D1238
Melt Index of Compound	16 g/10 min @Load 2.16 kg, Temperature 250 <sup>°</sup> C	16 g/10 min @Load 4.76 lb, Temperature 482 <sup>°</sup> F	MVR [cm <sup>3</sup> /10 min]; ISO 1133
	23 g/10 min @Load 5.00 kg, Temperature 250 <sup>°</sup> C	23 g/10 min @Load 11.0 lb, Temperature 482 <sup>°</sup> F	MVR [cm <sup>3</sup> /10 min]; ISO 1133
	30 g/10 min @Load 5.00 kg, Temperature 265 <sup>°</sup> C	30 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	122	122	ISO 2039-2
Hardness, H358/30	130 MPa	18900 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	3.0 %	3.0 %	Type I, 5 mm/min; ASTM D638
	3.0 %	3.0 %	5 mm/min; ISO 527
	3.0 %	3.0 %	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	7.30 GPa	1060 ksi	1 mm/min; ISO 527
	7.40 GPa	1070 ksi	5 mm/min; ASTM D638
Flexural Strength	170 MPa	24700 psi	1.3 mm/min, 50 mm span; ASTM D790
	175 MPa	25400 psi	2 mm/min; ISO 178
Flexural Yield Strength	170 MPa	24700 psi	1.3 mm/min, 50 mm span; ASTM D790
	180 MPa	26100 psi	2 mm/min; ISO 178
Flexural Modulus	5.90 GPa	856 ksi	1.3 mm/min, 50 mm span; ASTM D790
	6.20 GPa	899 ksi	2 mm/min; ISO 178
Izod Impact, Notched	0.750 J/cm	1.41 ft-lb/in	ASTM D256
	0.750 J/cm	1.41 ft-lb/in	ASTM D256
	@Temperature 0.000 Â°C	@Temperature 32.0 Â°F	
	0.750 J/cm	1.41 ft-lb/in	ASTM D256
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	
Izod Impact, Unnotched	5.60 J/cm	10.5 ft-lb/in	ASTM D4812
	5.60 J/cm	10.5 ft-lb/in	ASTM D4812
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	
Izod Impact, Notched (ISO)	8.00 kJ/mÂ²	3.81 ft-lb/inÂ²	80*10*4; ISO 180/1A

Mechanical Properties	Metric	English	Comments
	8.00 kJ/m <sup>2</sup> @Temperature 0.000 °C	3.81 ft-lb/in <sup>2</sup> @Temperature 32.0 °F	80*10*4; ISO 180/1A
	8.00 kJ/m <sup>2</sup> @Temperature -30.0 °C	3.81 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	40.0 kJ/m <sup>2</sup>	19.0 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1U
	35.0 kJ/m <sup>2</sup> @Temperature -30.0 °C	16.7 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	80*10*4; ISO 180/1U
Charpy Impact Unnotched	4.00 J/cm <sup>2</sup>	19.0 ft-lb/in <sup>2</sup>	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	4.20 J/cm <sup>2</sup>	20.0 ft-lb/in <sup>2</sup>	ISO 179/2C
	3.00 J/cm <sup>2</sup> @Temperature -30.0 °C	14.3 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	4.20 J/cm <sup>2</sup> @Temperature -30.0 °C	20.0 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	ISO 179/2C
Charpy Impact, Notched	0.600 J/cm <sup>2</sup>	2.86 ft-lb/in <sup>2</sup>	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.900 J/cm <sup>2</sup>	4.28 ft-lb/in <sup>2</sup>	ISO 179/2C
	0.500 J/cm <sup>2</sup> @Temperature -30.0 °C	2.38 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.900 J/cm <sup>2</sup> @Temperature -30.0 °C	4.28 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	ISO 179/2C

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	30.4 µm/m-°C	16.9 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 150 °C	@Temperature 73.4 - 302 °F	
	30.7 µm/m-°C	17.1 µin/in-°F	ISO 11359-2
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	
	40.0 µm/m-°C	22.2 µin/in-°F	

Thermal Properties	Metric	English	ISO 11359-2 Comments
	@Temperature 23.0 - 80.0 Å°C	@Temperature 73.4 - 176 Å°F	
CTE, linear, Transverse to Flow	73.2 Åµm/m-Å°C	40.7 Åµin/in-Å°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°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	3.2	3.2	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	3.6	3.6	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.6	3.6	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	
	24.0 kV/mm	610 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	
	26.0 kV/mm	660 kV/in	in oil; IEC 60243-1
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	26.0 kV/mm	660 kV/in	in oil; ASTM D149
	@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	

Electrical Properties	0.015 Metric	0.015 English	Comments
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	IEC 60250
	0.015	0.015	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	250 V	250 V	IEC 60112

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