

SABIC Innovative Plastics Valox[®] 4631 PBT (Europe-Africa-Middle East)

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

Material Notes:

VALOX 4631 is a 30% glass reinforced, flame retarded PBT injection moulding resin with good electrical properties and excellent mechanical properties.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-4631-PBT-Europe-Africa-Middle-East.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.67 g/cc	1.67 g/cc	ASTM D792
Density	1.67 g/cc	0.0603 lb/in ³	ISO 1183
Filler Content	30 %	30 %	ASTM D229
Moisture Absorption	0.0700 %	0.0700 %	23 [°] C / 50% RH; ISO 62
Water Absorption at Saturation	0.25 %	0.25 %	ISO 62
Viscosity	115000 cP	115000 cP	Melt Viscosity, 260 [°] C, 1500 sec-1; ISO 11443
Linear Mold Shrinkage, Flow	0.0010 - 0.0030 cm/cm	0.0010 - 0.0030 in/in	on Tensile Bar; SABIC Method
Linear Mold Shrinkage, Transverse	0.0040 - 0.0070 cm/cm	0.0040 - 0.0070 in/in	on Tensile Bar; SABIC Method
Melt Flow	13 g/10 min	13 g/10 min	ASTM D1238
	@Load 2.16 kg, Temperature 250 [°] C	@Load 4.76 lb, Temperature 482 [°] F	
	67 g/10 min	67 g/10 min	ASTM D1238
	@Load 5.00 kg, Temperature 250 [°] C	@Load 11.0 lb, Temperature 482 [°] F	
	90 g/10 min	90 g/10 min	ASTM D1238
	@Load 5.00 kg, Temperature 265 [°] C	@Load 11.0 lb, Temperature 509 [°] F	
	90 g/10 min	90 g/10 min	ASTM D1238
	@Load 5.00 kg, Temperature 266 [°] C	@Load 11.0 lb, Temperature 511 [°] F	
Melt Index of Compound	40 g/10 min	40 g/10 min	MVR [cm ³ /10 min]; ISO 1133
	@Load 5.00 kg, Temperature 250 [°] C	@Load 11.0 lb, Temperature 482 [°] F	
	65 g/10 min	65 g/10 min	MVR [cm ³ /10 min]; ISO 1133
	@Load 5.00 kg,	@Load 11.0 lb,	

Physical Properties	Temperature 265 Å°C Metric	Temperature 509 Å°F English	Comments
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	118	118	ISO 2039-2
Hardness, H358/30	115 MPa	16700 psi	ISO 2039-1
Tensile Strength at Break	130 MPa	18900 psi	Type I, 5 mm/min; ASTM D638
	130 MPa	18900 psi	5 mm/min; ISO 527
Tensile Strength, Yield	130 MPa	18900 psi	Type I, 5 mm/min; ASTM D638
	130 MPa	18900 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	11.5 GPa	1670 ksi	5 mm/min; ASTM D638
	11.5 GPa	1670 ksi	1 mm/min; ISO 527
Flexural Strength	200 MPa	29000 psi	1.3 mm/min, 50 mm span; ASTM D790
	200 MPa	29000 psi	2 mm/min; ISO 178
Flexural Yield Strength	200 MPa	29000 psi	1.3 mm/min, 50 mm span; ASTM D790
	200 MPa	29000 psi	2 mm/min; ISO 178
Flexural Modulus	9.00 GPa	1310 ksi	1.3 mm/min, 50 mm span; ASTM D790
	9.60 GPa	1390 ksi	2 mm/min; ISO 178
Izod Impact, Notched	0.800 J/cm	1.50 ft-lb/in	ASTM D256
	0.800 J/cm	1.50 ft-lb/in	ASTM D256
	@Temperature 0.000 Å°C	@Temperature 32.0 Å°F	
	0.800 J/cm	1.50 ft-lb/in	ASTM D256
	@Temperature -30.0 Å°C	@Temperature -22.0 Å°F	

Mechanical Properties	Metric	English	Comments
Izod Impact, Unnotched	6.60 J/cm	12.4 ft-lb/in	ASTM D4812
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Notched (ISO)	8.00 kJ/m ²	3.81 ft-lb/in ²	80*10*4; ISO 180/1A
	8.00 kJ/m ²	3.81 ft-lb/in ²	80*10*4; ISO 180/1A
	@Temperature 0.000 °C	@Temperature 32.0 °F	
	8.00 kJ/m ²	3.81 ft-lb/in ²	80*10*4; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched (ISO)	45.0 kJ/m ²	21.4 ft-lb/in ²	80*10*4; ISO 180/1U
	45.0 kJ/m ²	21.4 ft-lb/in ²	80*10*4; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	5.00 J/cm ²	23.8 ft-lb/in ²	ISO 179/2C
	5.00 J/cm ²	23.8 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	5.00 J/cm ²	23.8 ft-lb/in ²	ISO 179/2C
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	5.50 J/cm ²	26.2 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	1.00 J/cm ²	4.76 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	1.10 J/cm ²	5.23 ft-lb/in ²	ISO 179/2C
	0.900 J/cm ²	4.28 ft-lb/in ²	ISO 179/2C
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	1.00 J/cm ²	4.76 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	14.0 Åµm/m-Å°C	7.78 Åµin/in-Å°F	ISO 11359-2

Thermal Properties	@Temperature 23.0 - 150 °C Metric	@Temperature 73.4 - 302 °F English	Comments
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	3.0	3.0	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 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	19.0 kV/mm	483 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
	23.0 kV/mm	584 kV/in	in oil; IEC 60243-1
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	27.0 kV/mm	686 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	
	0.010	0.010	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	250 V	250 V	IEC 60112
	250 - 400 V	250 - 400 V	UL 746A
Hot Wire Ignition, HWI	>= 120 sec	>= 120 sec	UL 746A
High Amp Arc Ignition, HAI	15 - 30 arcs	15 - 30 arcs	UL 746A

Electrical Properties	Metric	English	Comments
High Voltage Arc Tracking Rate, HVTR	≥ 150 mm/min	≥ 5.91 in/min	UL 746A

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