

## SABIC Innovative Plastics Valox<sup>®</sup> 420SE0 PBT

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

### Material Notes:

30% glass reinforced, UL94 V-0/5V rated. Numerous applications: edge trimmers, food mixer motor stator and commutator, cooling fan, connectors, bobbins, switches etc

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Valox-420SE0-PBT.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-420SE0-PBT.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.63 g/cc	1.63 g/cc	ASTM D792
Density	1.63 g/cc	0.0589 lb/in <sup>3</sup>	ISO 1183
Moisture Absorption	0.0700 %	0.0700 %	23 <sup>°</sup> C / 50% RH; ISO 62
Water Absorption at Saturation	0.090 %	0.090 %	ISO 62
Linear Mold Shrinkage, Flow	0.0010 - 0.0050 cm/cm	0.0010 - 0.0050 in/in	on Tensile Bar; SABIC Method
	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Linear Mold Shrinkage, Transverse	0.0040 - 0.0080 cm/cm	0.0040 - 0.0080 in/in	on Tensile Bar; SABIC Method
	0.0050 - 0.010 cm/cm	0.0050 - 0.010 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Melt Flow	42 g/10 min	42 g/10 min	ASTM D1238
	@Load 5.00 kg, Temperature 250 <sup>°</sup> C	@Load 11.0 lb, Temperature 482 <sup>°</sup> F	
Melt Index of Compound	29 g/10 min	29 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	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	119	119	ASTM D785
	119	119	ISO 2039-2
Hardness, H358/30	118 MPa	17100 psi	ISO 2039-1
Tensile Strength at Break	120 MPa	17400 psi	Type I, 5 mm/min; ASTM D638
	120 MPa	17400 psi	5 mm/min; ISO 527
Tensile Strength, Yield	120 MPa	17400 psi	Type I, 5 mm/min; ASTM D638

Mechanical Properties	Metric 120 MPa	English 17400 psi	Comments 5 mm/min; ISO 527
Elongation at Break	1.9 %	1.9 %	5 mm/min; ISO 527
	2.0 %	2.0 %	Type I, 5 mm/min; ASTM D638
Elongation at Yield	1.9 %	1.9 %	5 mm/min; ISO 527
	2.0 %	2.0 %	Type I, 5 mm/min; ASTM D638
Tensile Modulus	10.0 GPa	1450 ksi	1 mm/min; ISO 527
	12.0 GPa	1740 ksi	5 mm/min; ASTM D638
Flexural Strength	180 MPa	26100 psi	ISO 178
	186 MPa	27000 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	9.50 GPa	1380 ksi	2 mm/min; ISO 178
	9.80 GPa	1420 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.600 J/cm	1.12 ft-lb/in	ASTM D256
	0.570 J/cm	1.07 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched	6.20 J/cm	11.6 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	7.00 kJ/m <sup>2</sup>	3.33 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 -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched (ISO)	45.0 kJ/m <sup>2</sup>	21.4 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1U
	45.0 kJ/m <sup>2</sup>	21.4 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	5.00 J/cm <sup>2</sup>	23.8 ft-lb/in <sup>2</sup>	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	5.00 J/cm <sup>2</sup>	23.8 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

Mechanical Properties	Metric	English	Comments
	0.600 J/cm <sup>Å</sup>	2.86 ft-lb/in <sup>Å</sup>	10*4 sp=62mm; ISO 179/1EA
	@Temperature -30.0 Å°C	@Temperature -22.0 Å°F	
Dart Drop, Total Energy	5.00 J	3.69 ft-lb	ASTM D3763
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
Taber Abrasion, mg/1000 Cycles	22	22	CS-17, 1 kg; SABIC Method

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	25.0 Åµm/m-Å°C	13.9 Åµin/in-Å°F	ASTM E 831
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	
	25.0 Åµm/m-Å°C	13.9 Åµin/in-Å°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	
	25.0 Åµm/m-Å°C	13.9 Åµin/in-Å°F	ISO 11359-2
	@Temperature 23.0 - 80.0 Å°C	@Temperature 73.4 - 176 Å°F	
CTE, linear, Transverse to Flow	89.0 Åµm/m-Å°C	49.4 Åµin/in-Å°F	ASTM E 831
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	
	89.0 Åµm/m-Å°C	49.4 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	
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
	>= 1.00e+15 ohm	>= 1.00e+15 ohm	
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	
	3.7	3.7	ASTM D150
	@Frequency 1.00e+6	@Frequency 1.00e+6	

Electrical Properties	Hz Metric	Hz English	Comments
	3.8	3.8	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	3.8	3.8	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	16.0 kV/mm	406 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
	19.0 kV/mm	483 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	22.0 kV/mm	559 kV/in	in oil; IEC 60243-1
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	23.0 kV/mm	584 kV/in	in oil; IEC 60243-1
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	24.0 kV/mm	610 kV/in	in oil; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0010	0.0010	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	0.0020	0.0020	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.0020	0.0020	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.010	0.010	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.020	0.020	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Arc Resistance	60 - 120 sec	60 - 120 sec	Tungsten; ASTM D495
Comparative Tracking Index	>= 125 V	>= 125 V	IEC 60112
	175 V	175 V	IEC 60112
	175 - 250 V	175 - 250 V	UL 746A

Hot Wire Ignition, HWI Electrical Properties	30 - 60 sec Metric	30 - 60 sec English	UL 746A Comments
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	>= 150 mm/min	>= 5.91 in/min	UL 746A

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