

SABIC Innovative Plastics Valox® ENH4560 PBT (Europe-Africa-Middle East)

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

Material Notes:

Valox® ENH4560 resin is a non-brominated/non-chlorinated flame retardant product based on Valox® PBT resin.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-ENH4560-PBT-Europe-Africa-Middle-East.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.56 g/cc	1.56 g/cc	ASTM D792
Density	1.56 g/cc	0.0564 lb/in ³	ISO 1183
Filler Content	30 %	30 %	ASTM D229
Viscosity	110000 cP	110000 cP	Melt Viscosity, 260°C, 1500 sec-1; ISO 11443
Melt Flow	23 g/10 min	23 g/10 min	ASTM D1238
	@Load 5.00 kg, Temperature 265 °C	@Load 11.0 lb, Temperature 509 °F	
Melt Index of Compound	16 g/10 min	16 g/10 min	MVR [cm ³ /10 min]; ISO 1133
	@Load 5.00 kg, Temperature 250 °C	@Load 11.0 lb, Temperature 482 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ISO 2039-2
Hardness, H358/30	142 MPa	20600 psi	ISO 2039-1
Tensile Strength at Break	105 MPa	15200 psi	5 mm/min; ISO 527
	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D638
Tensile Strength, Yield	105 MPa	15200 psi	5 mm/min; ISO 527
	110 MPa	16000 psi	Type I, 5 mm/min; ASTM D638
Elongation at Break	2.0 %	2.0 %	Type I, 5 mm/min; ASTM D638
	2.0 %	2.0 %	5 mm/min; ISO 527
	2.0 %	2.0 %	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 Mechanical Properties	11.0 GPa Metric	1600 ksi English	5 mm/min: ASTM D638 Comments
	11.0 GPa	1600 ksi	1 mm/min; ISO 527
Flexural Strength	150 MPa	21800 psi	1.3 mm/min, 50 mm span; ASTM D790
	170 MPa	24700 psi	2 mm/min; ISO 178
Flexural Yield Strength	150 MPa	21800 psi	1.3 mm/min, 50 mm span; ASTM D790
	170 MPa	24700 psi	2 mm/min; ISO 178
Flexural Modulus	9.00 GPa	1310 ksi	1.3 mm/min, 50 mm span; ASTM D790
	10.0 GPa	1450 ksi	2 mm/min; ISO 178
Izod Impact, Notched	0.750 J/cm	1.41 ft-lb/in	ASTM D256
	0.750 J/cm @Temperature 0.000 °C	1.41 ft-lb/in @Temperature 32.0 °F	ASTM D256
	0.750 J/cm @Temperature -30.0 °C	1.41 ft-lb/in @Temperature -22.0 °F	ASTM D256
Izod Impact, Unnotched	5.00 J/cm	9.37 ft-lb/in	ASTM D4812
	5.00 J/cm @Temperature -30.0 °C	9.37 ft-lb/in @Temperature -22.0 °F	ASTM D4812
Izod Impact, Notched (ISO)	9.00 kJ/mÂ²	4.28 ft-lb/inÂ²	80*10*4; ISO 180/1A
	9.00 kJ/mÂ² @Temperature 0.000 °C	4.28 ft-lb/inÂ² @Temperature 32.0 °F	80*10*4; ISO 180/1A
	9.00 kJ/mÂ² @Temperature -30.0 °C	4.28 ft-lb/inÂ² @Temperature -22.0 °F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	37.0 kJ/mÂ²	17.6 ft-lb/inÂ²	80*10*4; ISO 180/1U
	37.0 kJ/mÂ² @Temperature -30.0 °C	17.6 ft-lb/inÂ² @Temperature -22.0 °F	80*10*4; ISO 180/1U
Charpy Impact Unnotched	4.00 J/cmÂ²	19.0 ft-lb/inÂ²	ISO 179/2C
	3.50 J/cmÂ²	16.7 ft-lb/inÂ²	

Mechanical Properties	Metric @ Temperature -30.0 Â°C	English @ Temperature -22.0 Â°F	ISO 179/2C Comments
Charpy Impact, Notched	1.00 J/cmÂ²	4.76 ft-lb/inÂ²	ISO 179/2C
	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	20.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	11.1 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ISO 11359-2
	25.0 Âµm/m-Â°C @Temperature 23.0 - 150 Â°C	13.9 Âµin/in-Â°F @Temperature 73.4 - 302 Â°F	ISO 11359-2
CTE, linear, Transverse to Flow	62.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	34.4 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ISO 11359-2
	150 Âµm/m-Â°C @Temperature 23.0 - 150 Â°C	83.3 Âµin/in-Â°F @Temperature 73.4 - 302 Â°F	ISO 11359-2
Deflection Temperature at 0.46 MPa (66 psi)	225 Â°C	437 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Bf
	223 Â°C @Thickness 3.20 mm	433 Â°F @Thickness 0.126 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	210 Â°C	410 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	210 Â°C @Thickness 3.20 mm	410 Â°F @Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	205 Â°C	401 Â°F	Rate B/120; ISO 306
	206 Â°C	403 Â°F	Rate B/50; ISO 306
	207 Â°C	405 Â°F	Rate B/50; ASTM D1525
	217 Â°C	423 Â°F	Rate A/50; ASTM D1525
	220 Â°C	428 Â°F	Rate A/50; ISO 306

Electrical Properties	Metric	English	Comments
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Volume Resistivity Electrical Properties	1.00e+14 ohm-cm Metric	1.00e+14 ohm-cm English	ASTM D257 Comments
	1.00e+14 ohm-cm	1.00e+14 ohm-cm	IEC 60093
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	3.8	3.8	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.8	3.8	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	
	22.0 kV/mm	559 kV/in	in oil; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	22.0 kV/mm	559 kV/in	in oil; IEC 60243-1
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	32.0 kV/mm	813 kV/in	in oil; IEC 60243-1
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	32.0 kV/mm	813 kV/in	in oil; ASTM D149
	@Thickness 0.800 mm	@Thickness 0.0315 in	
Dissipation Factor	0.14	0.14	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.14	0.14	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	>= 600 V	>= 600 V	UL 746A
	600 V	600 V	IEC 60112
Hot Wire Ignition, HWI	>= 120 sec	>= 120 sec	UL 746A
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	UL 746A

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