

SABIC Innovative Plastics NORYL SE1GFN1 PPE+HIPS (Europe-Africa-Middle East)

Category : Polymer , Thermoplastic , Polyphenylene Ether/PPO , Polystyrene (PS)

Material Notes:

Noryl* SE1GFN1 is a 10% glass reinforced, injection moldable modified polyphenylene ether resin. Designed for improved dimensional stability and good flow , this resin also uses non-chlorinated, non-brominated FR additives to achieve a V1 UL94 rating at 1.0 mm and UL94 5VA rating @ 2.5 mm. Noryl SE1GFN1 has a GWIT of 775C@ 1.00 mm according to IEC 60695-2-13, and a CTI > 250 V according to IEC 60112 (Color dependant). Noryl SE1GFN1 may be an excellent material candidate for electrical or electronic applications requiring good rheological properties, heat resistance, hydrolysis resistance, low density and thin wall flame resistance. SE1GFN1 is halogen free according to VDE/DIN 472 part 815.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-NORYL-SE1GFN1-PPEHIPS-Europe-Africa-Middle-East.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.16 g/cc	1.16 g/cc	ASTM D792
Density	1.17 g/cc	0.0423 lb/in ³	ISO 1183
Moisture Absorption	0.0700 %	0.0700 %	23 ^o C / 50% RH; ISO 62
Water Absorption at Saturation	0.22 %	0.22 %	ISO 62
Linear Mold Shrinkage, Flow	0.0030 - 0.0050 cm/cm	0.0030 - 0.0050 in/in	on Tensile Bar; SABIC Method
Melt Index of Compound	15 g/10 min @Load 10.0 kg, Temperature 280 ^o C	15 g/10 min @Load 22.0 lb, Temperature 536 ^o F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, H358/30	100 MPa	14500 psi	ISO 2039-1
Tensile Strength at Break	70.0 MPa	10200 psi	5 mm/min; ISO 527
Tensile Strength, Yield	75.0 MPa	10900 psi	5 mm/min; ISO 527
Elongation at Break	3.0 %	3.0 %	5 mm/min; ISO 527
Elongation at Yield	2.5 %	2.5 %	5 mm/min; ISO 527
Tensile Modulus	4.00 GPa	580 ksi	1 mm/min; ISO 527
Flexural Yield Strength	110 MPa	16000 psi	2 mm/min; ISO 178
Flexural Modulus	3.00 GPa	435 ksi	2 mm/min; ISO 178
Izod Impact, Notched (ISO)	7.00 kJ/m ²	3.33 ft-lb/in ²	80*10*4; ISO 180/1A

Mechanical Properties	Metric $J/m\hat{A}^2$	English $lb/in\hat{A}^2$	Comments
	@Temperature -30.0 $\hat{A}^{\circ}C$	@Temperature -22.0 $\hat{A}^{\circ}F$	80*10*4; ISO 180/1A
	6.00 $kJ/m\hat{A}^2$	2.86 $ft-lb/in\hat{A}^2$	
	@Temperature -40.0 $\hat{A}^{\circ}C$	@Temperature -40.0 $\hat{A}^{\circ}F$	80*10*3; ISO 180/1A
Izod Impact, Unnotched (ISO)	25.0 $kJ/m\hat{A}^2$	11.9 $ft-lb/in\hat{A}^2$	80*10*4; ISO 180/1U
	25.0 $kJ/m\hat{A}^2$	11.9 $ft-lb/in\hat{A}^2$	
	@Temperature -30.0 $\hat{A}^{\circ}C$	@Temperature -22.0 $\hat{A}^{\circ}F$	80*10*4; ISO 180/1U
Charpy Impact Unnotched	3.00 $J/cm\hat{A}^2$	14.3 $ft-lb/in\hat{A}^2$	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	3.00 $J/cm\hat{A}^2$	14.3 $ft-lb/in\hat{A}^2$	
	@Temperature -30.0 $\hat{A}^{\circ}C$	@Temperature -22.0 $\hat{A}^{\circ}F$	Edgew 80*10*3 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	0.600 $J/cm\hat{A}^2$	2.86 $ft-lb/in\hat{A}^2$	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	0.500 $J/cm\hat{A}^2$	2.38 $ft-lb/in\hat{A}^2$	
	@Temperature -30.0 $\hat{A}^{\circ}C$	@Temperature -22.0 $\hat{A}^{\circ}F$	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	0.500 $J/cm\hat{A}^2$	2.38 $ft-lb/in\hat{A}^2$	
	@Temperature -40.0 $\hat{A}^{\circ}C$	@Temperature -40.0 $\hat{A}^{\circ}F$	Edgew 80*10*3 sp=62mm; ISO 179/1eA
Taber Abrasion, mg/1000 Cycles	50	50	CS-17, 1 kg; SABIC Method

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	50.0 $\hat{A}\mu m/m-\hat{A}^{\circ}C$	27.8 $\hat{A}\mu in/in-\hat{A}^{\circ}F$	ISO 11359-2
	@Temperature 23.0 - 80.0 $\hat{A}^{\circ}C$	@Temperature 73.4 - 176 $\hat{A}^{\circ}F$	
	550 $\hat{A}\mu m/m-\hat{A}^{\circ}C$	306 $\hat{A}\mu in/in-\hat{A}^{\circ}F$	ASTME 831
	@Temperature -40.0 - 40.0 $\hat{A}^{\circ}C$	@Temperature -40.0 - 104 $\hat{A}^{\circ}F$	
	550 $\hat{A}\mu m/m-\hat{A}^{\circ}C$	306 $\hat{A}\mu in/in-\hat{A}^{\circ}F$	ISO 11359-2
	@Temperature -40.0 - 40.0 $\hat{A}^{\circ}C$	@Temperature -40.0 - 104 $\hat{A}^{\circ}F$	
CTE, linear, Transverse to Flow	68.0 $\hat{A}\mu m/m-\hat{A}^{\circ}C$	37.8 $\hat{A}\mu in/in-\hat{A}^{\circ}F$	ASTME 831
	@Temperature -40.0 - 40.0 $\hat{A}^{\circ}C$	@Temperature -40.0 - 104 $\hat{A}^{\circ}F$	

Thermal Properties	Metric @Temperature -40.0 - 40.0 °C	English @Temperature -40.0 - 104 °F	Comments
	@Temperature -40.0 - 40.0 °C	@Temperature -40.0 - 104 °F	ISO 11359-2
	70.0 µm/m-°C	38.9 µin/in-°F	
	@Temperature 23.0 - 80.0 °C	@Temperature 73.4 - 176 °F	ISO 11359-2
Thermal Conductivity	0.270 W/m-K	1.87 BTU-in/hr-ft ² -°F	ISO 8302
Hot Ball Pressure Test	<= 135 °C	<= 275 °F	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	140 °C	284 °F	Edgew 120*10*4 sp=100mm; ISO 75/Be
Deflection Temperature at 1.8 MPa (264 psi)	135 °C	275 °F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
Vicat Softening Point	140 °C	284 °F	Rate B/50; ISO 306
	145 °C	293 °F	Rate B/120; ISO 306
	145 °C	293 °F	Rate A/50; ISO 306
UL RTI, Electrical	110 °C	230 °F	UL 746B
UL RTI, Mechanical with Impact	105 °C	221 °F	UL 746B
UL RTI, Mechanical without Impact	110 °C	230 °F	UL 746B
Flammability, UL94	V-1	V-1	UL 94
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-1	V-1	UL 94 by SABIC-IP
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	5VA	5VA	UL 94 by SABIC-IP
	@Thickness 2.50 mm	@Thickness 0.0984 in	
Oxygen Index	30 %	30 %	ISO 4589
Glow Wire Test	775 °C	1430 °F	IEC 60695-2-13
	800 °C	1470 °F	IEC 60695-2-13
	800 °C	1470 °F	IEC 60695-2-13
	960 °C	1760 °F	IEC 60695-2-12
	@Thickness 1.00 mm	@Thickness 0.0394 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	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	2.7	2.7	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Constant	2.8	2.8	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	16.0 kV/mm	406 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dielectric Strength	26.0 kV/mm	660 kV/in	in oil; IEC 60243-1
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dielectric Strength	33.0 kV/mm	838 kV/in	in oil; IEC 60243-1
	@Thickness 0.800 mm	@Thickness 0.0315 in	
Dissipation Factor	0.0030	0.0030	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dissipation Factor	0.0050	0.0050	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Comparative Tracking Index	250 V	250 V	IEC 60112
High Voltage Arc-Tracking Rate, HVTR	>= 150 mm/min	>= 5.91 in/min	UL 746A

Descriptive Properties	Value	Comments
Ball Pressure Test, 125Â°C +/- 2Â°C	PASSES	IEC 60695-10-2
Needle Flame Test, 10 s , passes at	1.5mm	IEC 60695-2-2

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