

SABIC Innovative Plastics NORYL V03505 PPE+HIPS

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

Material Notes:

Noryl* V03505 is a 35% milled fiber reinforced, injection moldable grade. Designed for good dimensional stability and low warpage, this resin also uses non-chlorinated, non-brominated FR additives to achieve a V0 UL94 rating at 2.0 mm. Noryl V03505 is may be an excellent material candidate for application requiring low warpage and flame resistance.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-NORYL-V03505-PPEHIPS.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.35 g/cc	1.35 g/cc	ASTM D792
Density	1.35 g/cc	0.0488 lb/in ³	ISO 1183
Moisture Absorption	0.0600 %	0.0600 %	23 ^o C / 50% RH; ISO 62
Water Absorption at Saturation	0.20 %	0.20 %	ISO 62
Linear Mold Shrinkage, Flow	0.0030 - 0.0050 cm/cm @Thickness 3.20 mm	0.0030 - 0.0050 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	49 g/10 min @Load 5.00 kg, Temperature 300 ^o C	49 g/10 min @Load 11.0 lb, Temperature 572 ^o F	ASTM D1238
Melt Index of Compound	15 g/10 min @Load 3.80 kg, Temperature 280 ^o C	15 g/10 min @Load 8.38 lb, Temperature 536 ^o F	MVR [cm ³ /10 min]; ISO 1133
	24 g/10 min @Load 5.00 kg, Temperature 280 ^o C	24 g/10 min @Load 11.0 lb, Temperature 536 ^o F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, H358/30	147 MPa	21300 psi	ISO 2039-1
Tensile Strength at Break	50.0 MPa	7250 psi	5 mm/min; ISO 527
	57.0 MPa	8270 psi	Type I, 5 mm/min; ASTM D638
Tensile Strength, Yield	50.0 MPa	7250 psi	5 mm/min; ISO 527
	59.0 MPa	8560 psi	Type I, 5 mm/min; ASTM D638
Elongation at Break	4.0 %	4.0 %	Type I, 5 mm/min; ASTM D638

Mechanical Properties	4.0 % Metric	4.0 % English	5 mm/min; ISO 527 Comments
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	4.40 GPa	638 ksi	5 mm/min; ASTM D638
	5.00 GPa	725 ksi	1 mm/min; ISO 527
Flexural Strength	95.0 MPa	13800 psi	2 mm/min; ISO 178
Flexural Yield Strength	100 MPa	14500 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	4.30 GPa	624 ksi	1.3 mm/min, 50 mm span; ASTM D790
	4.70 GPa	682 ksi	2 mm/min; ISO 178
Izod Impact, Notched	0.350 J/cm	0.656 ft-lb/in	ASTM D256
	0.350 J/cm	0.656 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	ASTM D256
Izod Impact, Unnotched (ISO)	26.0 kJ/m ²	12.4 ft-lb/in ²	80*10*4; ISO 180/1U
	24.0 kJ/m ²	11.4 ft-lb/in ²	80*10*4; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	80*10*4; ISO 180/1U
Charpy Impact Unnotched	3.00 J/cm ²	14.3 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	3.00 J/cm ²	14.3 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Dart Drop, Total Energy	13.0 J	9.59 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	40.0 Åµm/m-Å°C	22.2 Åµin/in-Å°F	ISO 11359-2
	@Temperature 23.0 - 80.0 Å°C	@Temperature 73.4 - 176 Å°F	ISO 11359-2
	50.0 Åµm/m-Å°C	27.8 Åµin/in-Å°F	ASTM E 831
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	ASTM E 831

Thermal Properties CTE, linear, transverse to Flow	50.0 Åµm/m-Å°C Metric	27.8 Åµin/in-Å°F English	Comments ASTM E 831
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	
	50.0 Åµm/m-Å°C	27.8 Åµin/in-Å°F	ISO 11359-2
	@Temperature 23.0 - 80.0 Å°C	@Temperature 73.4 - 176 Å°F	
Thermal Conductivity	0.280 W/m-K	1.94 BTU-in/hr-ftÅ²-Å°F	ISO 8302
Hot Ball Pressure Test	<= 105 Å°C	<= 221 Å°F	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	105 Å°C	221 Å°F	Edgew 120*10*4 sp=100mm; ISO 75/Be
Deflection Temperature at 1.8 MPa (264 psi)	95.0 Å°C	203 Å°F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	91.0 Å°C	196 Å°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Vicat Softening Point	110 Å°C	230 Å°F	Rate B/50; ISO 306
	115 Å°C	239 Å°F	Rate B/50; ASTM D1525
	120 Å°C	248 Å°F	Rate A/50; ISO 306
	120 Å°C	248 Å°F	Rate B/120; ISO 306
UL RTI, Electrical	50.0 Å°C	122 Å°F	UL 746B
UL RTI, Mechanical with Impact	50.0 Å°C	122 Å°F	UL 746B
UL RTI, Mechanical without Impact	50.0 Å°C	122 Å°F	UL 746B
Flammability, UL94	V-1	V-1	UL 94
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-0	V-0	UL 94
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Oxygen Index	34 %	34 %	ISO 4589
Glow Wire Test	960 Å°C	1760 Å°F	IEC 60695-2-12
	@Thickness 3.20 mm	@Thickness 0.126 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

Electrical Properties	Metric	English	Comments
Dielectric Constant	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	IEC 60250
	3.2	3.2	IEC 60250
Dielectric Strength	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	IEC 60250
	15.0 kV/mm	381 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	
	33.0 kV/mm	838 kV/in	in oil; IEC 60243-1
Dielectric Strength	@Thickness 0.800 mm	@Thickness 0.0315 in	
	0.0030	0.0030	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	IEC 60250
Dissipation Factor	0.0060	0.0060	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	IEC 60250

Descriptive Properties	Value	Comments
Ball Pressure Test, 75Å°C +/- 2Å°C	PASSES	IEC 60695-10-2

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