

## SABIC Innovative Plastics Noryl LS175 PPE+HIPS

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

### Material Notes:

Noryl\* LS175 modified polyphenylene ether resin is an unfilled grade suitable for both extrusion and injection molding conversion routes. It uses non-chlorinated, non-brominated FR additives to deliver low smoke performance and a UL94 V0 rating. Noryl LS175 resin is currently available in limited colors and may be an excellent material candidate for applications in transportation and building/construction markets. This data was supplied by SABIC-IP for the Americas region.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Noryl-LS175-PPEHIPS.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Noryl-LS175-PPEHIPS.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.11 g/cc	1.11 g/cc	ASTM D 792
Density	1.11 g/cc	0.0401 lb/in <sup>3</sup>	ISO 1183
Moisture Absorption at Equilibrium	0.42 %	0.42 %	23 <sup>o</sup> C / 50% RH; ISO 62
Water Absorption at Saturation	0.45 % @Temperature 23.0 <sup>o</sup> C	0.45 % @Temperature 73.4 <sup>o</sup> F	ISO 62
Linear Mold Shrinkage, Flow	0.0050 - 0.0080 cm/cm @Thickness 3.20 mm	0.0050 - 0.0080 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	4.0 g/10 min @Load 5.00 kg, Temperature 280 <sup>o</sup> C	4.0 g/10 min @Load 11.0 lb, Temperature 536 <sup>o</sup> F	[cm <sup>3</sup> /10 min] Melt Volume Rate; ISO 1133
	4.4 g/10 min @Load 5.00 kg, Temperature 280 <sup>o</sup> C	4.4 g/10 min @Load 11.0 lb, Temperature 536 <sup>o</sup> F	ASTM D 1238

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	56.0 MPa	8120 psi	Type I, 50 mm/min; ASTM D 638
	68.0 MPa	9860 psi	50 mm/min; ISO 527
Tensile Strength, Yield	72.0 MPa	10400 psi	50 mm/min; ISO 527
	74.0 MPa	10700 psi	Type I, 50 mm/min; ASTM D 638
Elongation at Break	6.0 %	6.0 %	50 mm/min; ISO 527
	16 %	16 %	Type I, 50 mm/min; ASTM D 638
Elongation at Yield	4.5 %	4.5 %	50 mm/min; ISO 527

Mechanical Properties	Metric	English	Comments
Tensile Modulus	2.70 GPa	392 ksi	1 mm/min; ISO 527
	2.89 GPa	419 ksi	50 mm/min; ASTM D 638
Flexural Yield Strength	110 MPa	16000 psi	2 mm/min; ISO 178
	119 MPa	17300 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Modulus	2.56 GPa	371 ksi	2 mm/min; ISO 178
	2.57 GPa	373 ksi	1.3 mm/min, 50 mm span; ASTM D 790
Izod Impact, Notched	0.730 J/cm	1.37 ft-lb/in	ASTM D 256
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	
	1.69 J/cm	3.17 ft-lb/in	ASTM D 256
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Izod Impact, Notched (ISO)	9.00 kJ/mÂ²	4.28 ft-lb/inÂ²	80*10*4; ISO 180/1A
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	
	21.0 kJ/mÂ²	9.99 ft-lb/inÂ²	80*10*4; ISO 180/1A
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Charpy Impact, Notched	2.60 J/cmÂ²	12.4 ft-lb/inÂ²	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Impact Test	49.0 J	36.1 ft-lb	Instrumented Impact Total Energy; ASTM D 3763
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	86.5 Âµm/m-Â°C	48.1 Âµin/in-Â°F	ISO 11359-2
	@Temperature 23.0 - 80.0 Â°C	@Temperature 73.4 - 176 Â°F	
	92.4 Âµm/m-Â°C	51.3 Âµin/in-Â°F	ASTM E 831
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
CTE, linear, Transverse to Flow	95.9 Âµm/m-Â°C	53.3 Âµin/in-Â°F	ASTM E 831

Thermal Properties	Metric @Temperature -40.0 - 40.0 Å°C	English @Temperature -40.0 - 104 Å°F	Comments
	95.9 Åµm/m-Å°C	53.3 Åµin/in-Å°F	
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	ISO 11359-2
Deflection Temperature at 1.8 MPa (264 psi)	117 Å°C	243 Å°F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	115 Å°C	239 Å°F	
	@Thickness 3.20 mm	@Thickness 0.126 in	unannealed; ASTM D 648
Vicat Softening Point	140 Å°C	284 Å°F	Rate B/50; ASTM D 1525
	142 Å°C	288 Å°F	Rate B/50; ISO 306
	144 Å°C	291 Å°F	Rate B/120; ISO 306
UL RTI, Electrical	65.0 Å°C	149 Å°F	UL 746B
UL RTI, Mechanical with Impact	65.0 Å°C	149 Å°F	UL 746B
UL RTI, Mechanical without Impact	65.0 Å°C	149 Å°F	UL 746B
Flammability, UL94	V-1	V-1	
	@Thickness 1.00 mm	@Thickness 0.0394 in	UL 94
	V-0	V-0	
	@Thickness 1.50 mm	@Thickness 0.0591 in	UL 94
Oxygen Index	31 %	31 %	LOI; ISO 4589
Glow Wire Test	825 Å°C	1520 Å°F	
	@Thickness 1.00 mm	@Thickness 0.0394 in	Glow Wire Ignitability Temperature; IEC 60695-2-13
	825 Å°C	1520 Å°F	
	@Thickness 2.00 mm	@Thickness 0.0787 in	Glow Wire Ignitability Temperature; IEC 60695-2-13
	825 Å°C	1520 Å°F	
	@Thickness 2.50 mm	@Thickness 0.0984 in	Glow Wire Ignitability Temperature; IEC 60695-2-13
	825 Å°C	1520 Å°F	
	@Thickness 3.00 mm	@Thickness 0.118 in	Glow Wire Ignitability Temperature; IEC 60695-2-13
	960 Å°C	1760 Å°F	
	@Thickness 3.20 mm	@Thickness 0.126 in	Glow Wire Flammability Index; IEC 60695-2-12

Electrical Properties	Metric	English	Comments
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Volume Resistivity Electrical Properties	1.00e+15 ohm-cm Metric	1.00e+15 ohm-cm English	IEC 60093 Comments
	1.00e+17 ohm-cm	1.00e+17 ohm-cm	ASTM D 257
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
	>= 1.00e+17 ohm	>= 1.00e+17 ohm	ASTM D 257
Dielectric Constant	2.7	2.7	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	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	
	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
	@Thickness 0.800 mm	@Thickness 0.0315 in	
Dissipation Factor	0.0020	0.0020	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.0040	0.0040	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Arc Resistance	60 - 120 sec	60 - 120 sec	Tungsten, PLC code 6; ASTM D 495
Comparative Tracking Index	200 V	200 V	IEC 60112
	175 - 250 V	175 - 250 V	PLC code 3; UL 746A
Hot Wire Ignition, HWI	60 - 120 sec	60 - 120 sec	PLC code 1; UL 746A
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	surface, PLC code 0; UL 746A
High Voltage Arc-Tracking Rate, HVTR	80.0 - 150 mm/min	3.15 - 5.91 in/min	PLC code 3; UL 746A

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