

## SABIC Innovative Plastics NORYL NH5020 PPE+PS (Europe-Africa-Middle East)

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

### Material Notes:

Noryl\* NH5020 Resin is an unreinforced blend of Polyphenylene Ether(PPE) + Polystyrene resin. The material offers a good balance of heat, flow, hydrolytic stability, and non-halogenated flame retardant. The material is suitable for injection molding and is available in custom colors.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-NORYL-NH5020-PPEPS-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-NORYL-NH5020-PPEPS-Europe-Africa-Middle-East.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.11 g/cc	1.11 g/cc	ASTM D792
Density	1.11 g/cc	0.0401 lb/in <sup>3</sup>	ISO 1183
Moisture Absorption	0.0500 %	0.0500 %	23 <sup>o</sup> C / 50% RH; ISO 62
Water Absorption at Saturation	0.25 %	0.25 %	ISO 62
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	9.8 g/10 min @Load 5.00 kg, Temperature 280 <sup>o</sup> C	9.8 g/10 min @Load 11.0 lb, Temperature 536 <sup>o</sup> F	ASTM D1238
Melt Index of Compound	10 g/10 min @Load 5.00 kg, Temperature 280 <sup>o</sup> C	10 g/10 min @Load 11.0 lb, Temperature 536 <sup>o</sup> F	MVR [cm <sup>3</sup> /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	62.0 MPa	8990 psi	Type I, 50 mm/min; ASTM D638
	77.0 MPa	11200 psi	50 mm/min; ISO 527
Tensile Strength, Yield	79.0 MPa	11500 psi	Type I, 50 mm/min; ASTM D638
	80.0 MPa	11600 psi	50 mm/min; ISO 527
Elongation at Break	5.6 %	5.6 %	50 mm/min; ISO 527
	15 %	15 %	Type I, 50 mm/min; ASTM D638
Elongation at Yield	4.7 %	4.7 %	50 mm/min; ISO 527
	5.0 %	5.0 %	Type I, 50 mm/min; ASTM D638
Tensile Modulus	2.72 GPa	395 ksi	50 mm/min; ASTM D638

Mechanical Properties	Metric 3.00 GPa	English 435 ksi	Comments 1 mm/min; ISO 527
Flexural Yield Strength	122 MPa	17700 psi	1.3 mm/min, 50 mm span; ASTM D790
	126 MPa	18300 psi	2 mm/min; ISO 178
Flexural Modulus	2.98 GPa	432 ksi	2 mm/min; ISO 178
	3.00 GPa	435 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.910 J/cm	1.70 ft-lb/in	ASTM D256
	0.590 J/cm @Temperature -30.0 Â°C	1.11 ft-lb/in @Temperature -22.0 Â°F	ASTM D256
Izod Impact, Notched (ISO)	8.00 kJ/mÂ²	3.81 ft-lb/inÂ²	80*10*4; ISO 180/1A
	6.00 kJ/mÂ² @Temperature -30.0 Â°C	2.86 ft-lb/inÂ² @Temperature -22.0 Â°F	80*10*4; ISO 180/1A
Charpy Impact, Notched	0.700 J/cmÂ²	3.33 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	19.0 J	14.0 ft-lb	ASTM D3763
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	61.2 Âµm/m-Â°C	34.0 Âµin/in-Â°F	ASTM E 831
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
	61.2 Âµm/m-Â°C	34.0 Âµin/in-Â°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
CTE, linear, Transverse to Flow	68.4 Âµm/m-Â°C	38.0 Âµin/in-Â°F	ASTM E 831
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
	68.4 Âµm/m-Â°C	38.0 Âµin/in-Â°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
Deflection Temperature at 0.46 MPa (66 psi)	122 Â°C	252 Â°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	

Thermal Properties	Metric	English	Comments
	@Thickness 6.40 mm	@Thickness 0.252 in	unannealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	119 Â°C	246 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/ Af
	117 Â°C	243 Â°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	122 Â°C	252 Â°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	137 Â°C	279 Â°F	Rate B/50; ASTM D1525
	138 Â°C	280 Â°F	Rate B/50; ISO 306
	139 Â°C	282 Â°F	Rate B/120; ISO 306
UL RTI, Electrical	110 Â°C	230 Â°F	UL 746B
UL RTI, Mechanical with Impact	105 Â°C	221 Â°F	UL 746B
UL RTI, Mechanical without Impact	110 Â°C	230 Â°F	UL 746B
Flammability, UL94	V-2	V-2	UL 94
	@Thickness 0.400 mm	@Thickness 0.0157 in	
	V-0	V-0	UL 94
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	5VA	5VA	UL 94
	@Thickness 2.50 mm	@Thickness 0.0984 in	

Electrical Properties	Metric	English	Comments
Dielectric Strength	49.0 kV/mm	1240 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
Arc Resistance	60 - 120 sec	60 - 120 sec	Tungsten; ASTM D495
	180 - 240 sec	180 - 240 sec	UL 746A
Comparative Tracking Index	250 - 400 V	250 - 400 V	UL 746A
	250 - 400 V	250 - 400 V	IEC 60112
Hot Wire Ignition, HWI	>= 120 sec	>= 120 sec	UL 746A
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	UL 746A

Descriptive Properties	Value	Comments
Ball Pressure Test, 125Å°C +/- 2Å°C	Pass	IEC 60695-10-2

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