

## SABIC Innovative Plastics Noryl HIPS3191 PS

Category : Polymer , Thermoplastic , Polystyrene (PS)

### Material Notes:

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-HIPS3191-PS.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Noryl-HIPS3191-PS.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.03 g/cc	1.03 g/cc	ASTM D 792
Density	1.03 g/cc	0.0372 lb/in <sup>3</sup>	ISO 1183
Moisture Absorption at Equilibrium	0.050 %	0.050 %	23 <sup>o</sup> C / 50% RH; ISO 62
Water Absorption at Saturation	0.25 % @Temperature 23.0 <sup>o</sup> C	0.25 % @Temperature 73.4 <sup>o</sup> F	ISO 62
Linear Mold Shrinkage, Flow	0.0040 - 0.0070 cm/cm @Thickness 3.20 mm	0.0040 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	2.6 g/10 min @Load 5.00 kg, Temperature 200 <sup>o</sup> C	2.6 g/10 min @Load 11.0 lb, Temperature 392 <sup>o</sup> F	ASTM D 1238
	7.0 g/10 min @Load 5.00 kg, Temperature 220 <sup>o</sup> C	7.0 g/10 min @Load 11.0 lb, Temperature 428 <sup>o</sup> F	[cm <sup>3</sup> /10 min] Melt Volume Rate; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	21.0 MPa	3050 psi	50 mm/min; ISO 527
	25.0 MPa	3630 psi	Type I, 50 mm/min; ASTM D 638
Tensile Strength, Yield	30.0 MPa	4350 psi	50 mm/min; ISO 527
	32.0 MPa	4640 psi	Type I, 50 mm/min; ASTM D 638
Elongation at Break	43 %	43 %	Type I, 50 mm/min; ASTM D 638
	45.7 %	45.7 %	50 mm/min; ISO 527
Elongation at Yield	1.6 %	1.6 %	50 mm/min; ISO 527
	1.7 %	1.7 %	Type I, 50 mm/min; ASTM D 638
Tensile Modulus	2.14 GPa	310 ksi	5 mm/min; ASTM D 638

Mechanical Properties	Metric Pa	English	Comments ISO 527
Flexural Yield Strength	46.0 MPa	6670 psi	2 mm/min; ISO 178
	48.0 MPa	6960 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Modulus	2.24 GPa	325 ksi	2 mm/min; ISO 178
	2.34 GPa	339 ksi	1.3 mm/min, 50 mm span; ASTM D 790
Izod Impact, Notched	1.36 J/cm	2.55 ft-lb/in	ASTM D 256
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	
	2.70 J/cm	5.06 ft-lb/in	ASTM D 256
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Izod Impact, Notched (ISO)	6.00 kJ/mÂ²	2.86 ft-lb/inÂ²	80*10*4; ISO 180/1A
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	
	13.0 kJ/mÂ²	6.19 ft-lb/inÂ²	80*10*4; ISO 180/1A
	@Temperature 23.0 Â°C	@Temperature 73.4 Â°F	
Charpy Impact, Notched	1.20 J/cmÂ²	5.71 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	20.0 J	14.8 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	86.8 Âµm/m-Â°C	48.2 Âµin/in-Â°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
	96.8 Âµm/m-Â°C	53.8 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	86.9 Âµm/m-Â°C	48.3 Âµin/in-Â°F	ASTM E 831
	@Temperature -40.0 - 40.0 Â°C	@Temperature -40.0 - 104 Â°F	
	96.8 Âµm/m-Â°C	53.8 Âµin/in-Â°F	

Thermal Properties	Metric @ Temperature -40.0 - 40.0 Â°C	English @ Temperature -40.0 - 104 Â°F	ISO 11359-2 Comments
Deflection Temperature at 1.8 MPa (264 psi)	77.0 Â°C	171 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	76.0 Â°C @Thickness 3.20 mm	169 Â°F @Thickness 0.126 in	unannealed; ASTM D 648
Vicat Softening Point	90.0 Â°C	194 Â°F	Rate B/50; ASTM D 1525
	90.0 Â°C	194 Â°F	Rate B/50; ISO 306
	92.0 Â°C	198 Â°F	Rate B/120; ISO 306

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