

## SABIC Innovative Plastics Noryl V190 PPE+HIPS (Europe-Africa-Middle East)

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

### Material Notes:

NORYL V190 is an unfilled flame retardant material with a Vicat B/120 of 90Â°C according ISO 306. NORYL V190 is V1 at 2.0 mm according UL94 and halogen free according VDE/DIN 472 part 815. This data was supplied by SABIC-IP for the Europe-Africa-Middle East region.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Noryl-V190-PPEHIPS-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Noryl-V190-PPEHIPS-Europe-Africa-Middle-East.php)

Physical Properties	Metric	English	Comments
Density	1.10 g/cc	0.0397 lb/inÂ³	ISO 1183
Moisture Absorption at Equilibrium	0.060 %	0.060 %	23Â°C / 50% RH; ISO 62
Water Absorption at Saturation	0.14 % @Temperature 23.0 Â°C	0.14 % @Temperature 73.4 Â°F	ISO 62
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	on tensile bar; SABIC Method
Melt Flow	8.0 g/10 min @Load 1.20 kg, Temperature 280 Â°C	8.0 g/10 min @Load 2.65 lb, Temperature 536 Â°F	[cm³/10 min] Melt Volume Rate; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, H358/30	90.0 MPa	13100 psi	ISO 2039-1
Tensile Strength at Break	35.0 MPa	5080 psi	50 mm/min; ISO 527
Tensile Strength, Yield	45.0 MPa	6530 psi	50 mm/min; ISO 527
Elongation at Break	30 %	30 %	50 mm/min; ISO 527
Elongation at Yield	2.5 %	2.5 %	50 mm/min; ISO 527
Tensile Modulus	2.30 GPa	334 ksi	1 mm/min; ISO 527
Flexural Yield Strength	55.0 MPa	7980 psi	2 mm/min; ISO 178
Flexural Modulus	2.10 GPa	305 ksi	2 mm/min; ISO 178
Izod Impact, Notched (ISO)	4.00 kJ/mÂ² @Temperature -30.0 Â°C	1.90 ft-lb/inÂ² @Temperature -22.0 Â°F	80*10*4; ISO 180/1A
	7.00 kJ/mÂ²	3.33 ft-lb/inÂ²	

Mechanical Properties	Metric @Temperature 23.0 °C	English @Temperature 73.4 °F	80*10*4-ISO 180/1A Comments
Charpy Impact, Notched	0.500 J/cm <sup>2</sup>	2.38 ft-lb/in <sup>2</sup>	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Taber Abrasion, mg/1000 Cycles	0.800 J/cm <sup>2</sup>	3.81 ft-lb/in <sup>2</sup>	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	85 @Load 1.00 kg	85 @Load 2.20 lb	CS-17; SABIC Method

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	90.0 µm/m-°C	50.0 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 80.0 °C	@Temperature 73.4 - 176 °F	
CTE, linear, Transverse to Flow	90.0 µm/m-°C	50.0 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 80.0 °C	@Temperature 73.4 - 176 °F	
Thermal Conductivity	0.230 W/m-K	1.60 BTU-in/hr-ft <sup>2</sup> - °F	ISO 8302
Hot Ball Pressure Test	<= 80.0 °C	<= 176 °F	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	80.0 °C	176 °F	Edgew 120*10*4 sp=100mm; ISO 75/Be
Deflection Temperature at 1.8 MPa (264 psi)	70.0 °C	158 °F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
Vicat Softening Point	85.0 °C	185 °F	Rate B/50; ISO 306
	90.0 °C	194 °F	Rate B/120; ISO 306
	95.0 °C	203 °F	Rate A/50; ISO 306
UL RTI, Electrical	50.0 °C	122 °F	UL 746B
UL RTI, Mechanical with Impact	50.0 °C	122 °F	UL 746B
UL RTI, Mechanical without Impact	50.0 °C	122 °F	UL 746B
Flammability, UL94	V-1	V-1	UL 94
	@Thickness 2.00 mm	@Thickness 0.0787 in	
	V-0	V-0	UL 94
	@Thickness 3.00 mm	@Thickness 0.118 in	

Thermal Properties	Metric	English	Comments
Glow Wire Test	960 Å°C @Thickness 3.20 mm	1760 Å°F @Thickness 0.126 in	Glow Wire Flammability Index; IEC 60695-2-12

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	2.5 @Frequency 1.00e+6 Hz	2.5 @Frequency 1.00e+6 Hz	IEC 60250
	2.6 @Frequency 50.0 - 60.0 Hz	2.6 @Frequency 50.0 - 60.0 Hz	IEC 60250
Dielectric Strength	16.0 kV/mm @Thickness 3.20 mm	406 kV/in @Thickness 0.126 in	in oil; IEC 60243-1
	26.0 kV/mm @Thickness 1.60 mm	660 kV/in @Thickness 0.0630 in	in oil; IEC 60243-1
	33.0 kV/mm @Thickness 0.800 mm	838 kV/in @Thickness 0.0315 in	in oil; IEC 60243-1
Dissipation Factor	0.0040 @Frequency 1.00e+6 Hz	0.0040 @Frequency 1.00e+6 Hz	IEC 60250
	0.010 @Frequency 50.0 - 60.0 Hz	0.010 @Frequency 50.0 - 60.0 Hz	IEC 60250
Comparative Tracking Index	225 V	225 V	IEC 60112

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

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