

SABIC Innovative Plastics NORYL LTA5020 PPE+PS

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

Material Notes:

Noryl* LTA5020 is an unfilled, injection moldable grade. Designed for improved long term heat aging, this resin also uses non-chlorinated, non-brominated FR additives to achieve a V0 UL94 rating. Noryl LTA5020 is only available in a dark grey/black and may be an excellent material candidate for application requiring electrically insulating properties.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-NORYL-LTA5020-PPEPS.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.15 g/cc	1.15 g/cc	ASTM D792
Density	1.15 g/cc	0.0415 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	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	10 g/10 min @Load 5.00 kg, Temperature 280 ^o C	10 g/10 min @Load 11.0 lb, Temperature 536 ^o F	ASTM D1238
Melt Index of Compound	10 g/10 min @Load 5.00 kg, Temperature 280 ^o C	10 g/10 min @Load 11.0 lb, Temperature 536 ^o F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	60.0 MPa	8700 psi	Type I, 50 mm/min; ASTM D638
	80.0 MPa	11600 psi	50 mm/min; ISO 527
Tensile Strength, Yield	80.0 MPa	11600 psi	Type I, 50 mm/min; ASTM D638
	83.0 MPa	12000 psi	50 mm/min; ISO 527
Elongation at Break	6.0 %	6.0 %	50 mm/min; ISO 527
	18 %	18 %	Type I, 50 mm/min; ASTM D638
Elongation at Yield	4.8 %	4.8 %	Type I, 50 mm/min; ASTM D638
	5.0 %	5.0 %	50 mm/min; ISO 527
Tensile Modulus	2.84 GPa	412 ksi	1 mm/min; ISO 527

Mechanical Properties	Metric 2.89 GPa	English 418 ksi	Comments 5 mm/min; ASTM D538
Flexural Yield Strength	118 MPa	17100 psi	1.3 mm/min, 50 mm span; ASTM D790
	131 MPa	19000 psi	2 mm/min; ISO 178
Flexural Modulus	2.77 GPa	402 ksi	1.3 mm/min, 50 mm span; ASTM D790
	2.91 GPa	422 ksi	2 mm/min; ISO 178
Izod Impact, Notched	0.900 J/cm	1.69 ft-lb/in	ASTM D256
	0.380 J/cm @Temperature -30.0 °C	0.712 ft-lb/in @Temperature -22.0 °F	ASTM D256
Izod Impact, Unnotched	14.0 J/cm	26.2 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	4.00 kJ/m ²	1.90 ft-lb/in ²	80*10*4; ISO 180/1A
	3.00 kJ/m ² @Temperature -30.0 °C	1.43 ft-lb/in ² @Temperature -22.0 °F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	35.0 kJ/m ²	16.7 ft-lb/in ²	80*10*4; ISO 180/1U
	34.0 kJ/m ² @Temperature -30.0 °C	16.2 ft-lb/in ² @Temperature -22.0 °F	80*10*4; ISO 180/1U
Charpy Impact, Notched	0.300 J/cm ²	1.43 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	17.0 J	12.5 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	83.0 Åµm/m-Å°C	46.1 Åµin/in-Å°F	ASTM E 831
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	
	83.0 Åµm/m-Å°C	46.1 Åµin/in-Å°F	ISO 11359-2
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	
CTE, linear, Transverse to Flow	89.0 Åµm/m-Å°C	49.4 Åµin/in-Å°F	ASTM E 831
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	

Thermal Properties	Metric $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	English $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	Comments
	@Temperature -40.0 - 40.0 Å°C	@Temperature -40.0 - 104 Å°F	ISO 11359-2
Hot Ball Pressure Test	$\leq 135 \text{ Å}^\circ\text{C}$	$\leq 275 \text{ Å}^\circ\text{F}$	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	128 Å°C	262 Å°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	134 Å°C	273 Å°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	115 Å°C	239 Å°F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	112 Å°C	234 Å°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	116 Å°C	241 Å°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	135 Å°C	275 Å°F	Rate B/50; ISO 306
	137 Å°C	279 Å°F	Rate B/120; ISO 306
	137 Å°C	279 Å°F	Rate B/50; ASTM D1525
UL RTI, Electrical	130 Å°C	266 Å°F	UL 746B
UL RTI, Mechanical with Impact	120 Å°C	248 Å°F	UL 746B
UL RTI, Mechanical without Impact	130 Å°C	266 Å°F	UL 746B
Flammability, UL94	V-0	V-0	UL 94 by SABIC-IP
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	5VA	5VA	UL 94 by SABIC-IP
	@Thickness 3.00 mm	@Thickness 0.118 in	
Glow Wire Test	800 Å°C	1470 Å°F	IEC 60695-2-13
	800 Å°C	1470 Å°F	IEC 60695-2-13
	960 Å°C	1760 Å°F	IEC 60695-2-12
@Thickness 1.50 mm	@Thickness 0.0591 in		

Electrical Properties	Metric	English	Comments
Volume Resistivity	3.70e+16 ohm-cm	3.70e+16 ohm-cm	ASTM D257

Surface Resistance Electrical Properties	4.20e+14 ohm Metric	4.20e+14 ohm English	ASTM D257 Comments
Dielectric Constant	2.76	2.76	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	2.87	2.87	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	18.6 kV/mm	472 kV/in	in oil; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	30.0 kV/mm	762 kV/in	in oil; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0030	0.0030	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.025	0.025	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Comparative Tracking Index	275 V	275 V	IEC 60112
	250 - 400 V	250 - 400 V	
Hot Wire Ignition, HWI	60 - 120 sec	60 - 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	PASSES	IEC 60695-10-2
UV-light, water exposure/immersion	f1	UL 746C

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