NORYL™ RESIN LPN170HG

DESCRIPTION

NORYL LPN170HG resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS) designed for high heat resistance, low density, high gloss, low outgassing and good dimensional stability performance. This extrusion and injection moldable grade carries HDT 170°C, special gravity 1.07 g/cm3. This grade is capable for physical vapor deposition with good light distribution and high reflection rate. LPN170HG is targeted for automotive headlamp reflector, bezel, trim, light shielding and other high surface quality / high heat resistance demanded components.

GENERAL INFORMATION	
Features	Hydrolytic Stability, Dimensional stability, High temperature resistance, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding, Extrusion

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Lighting, Automotive Exteriors
Consumer	Home Appliances

TYPICAL PROPERTY VALUES

Revision 20241016

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	78	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	5.2	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	31.2	%	ASTM D638
Tensile Modulus, 5 mm/min	2627	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	124	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2655	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	78	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	5.3	%	ISO 527
Tensile Strain, break, 5 mm/min	15	%	ISO 527
Tensile Modulus, 1 mm/min	2644	MPa	ISO 527
Flexural Strength, 2 mm/min	125	MPa	ISO 178
Flexural Modulus, 2 mm/min	2782	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	30	J/m	ASTM D256
Izod Impact, notched, -40°C	35	J/m	ASTM D256
Izod Impact, unnotched, 23°C	791	J/m	ASTM D4812
Izod Impact, unnotched, -40°C	700	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	4.3	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -40°C	4.3	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	71.9	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -40°C	42.6	kJ/m²	ISO 180/1U
THERMAL [1]			

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 0.45 MPa, 6.4 mm, unannealed	180	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	170	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	177	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	163	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	5.75E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	5.93E-05	1/°C	ISO 11359-2
PHYSICAL (1)			
Specific Gravity	1.07	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.023	%	ISO 62-1
Melt Flow Rate, 300°C/5.0 kgf	8.7	g/10 min	ASTM D1238
Mold Shrinkage, flow, 3.2 mm (2)	0.83	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm (2)	0.84	%	SABIC method
ELECTRICAL (1)			
Surface Resistivity	9.2E+16	Ω	ASTM D257
Volume Resistivity	9.2E+16	Ω.cm	ASTM D257
OPTICAL PROPERTIES (1)			
Gloss (45°)	101	‰	ASTM D2457
Gloss (60°)	102	‰	ASTM D2457
INJECTION MOLDING (3)			
Drying Temperature	100 – 120	°C	
Drying Time	3 – 5	Hrs	
Melt Temperature	300 – 340	°C	
Nozzle Temperature	300 – 340	°C	
Front - Zone 3 Temperature	300 – 340	°C	
Middle - Zone 2 Temperature	280 – 340	°C	
Rear - Zone 1 Temperature	280 – 340	°C	
Mold Temperature	80 – 150	°C	
Back Pressure	2 – 10	MPa	
Screw Speed	20 – 100	rpm	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

DISCLAIMER