سیابک ےندائی

Revision 20240919

NORYL[™] RESIN LPN130HG

DESCRIPTION

CENERAL INCORMATION

NORYLTM LPN130HG resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS) designed for high gloss, low density, low outgassing and good dimensional stability performance. This extrusion and injection moldable grade has good processibility with density of 1.07 g/cm3, being capable for physical vapor deposition with good light distribution and high reflection rate. LPN130HG is targeted for automotive heads-up-display (HUD) reflector, headlamp reflector, bezel, light shielding and other high surface quality demanded components.

GENERAL INFORMATION	
Features	High Flow, Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Dimensional stability, High temperature resistance, High gloss, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding, Extrusion

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Lighting
Consumer	Home Appliances, Commercial Appliance
Electrical and Electronics	Energy Management, Electronic Components, Mobile Phone - Computer - Tablets

TYPICAL PROPERTY VALUES

PROPERTIES TYPICAL VALUES UNITS TEST METHODS MECHANICAL⁽¹⁾ Tensile Stress, yld, Type I, 5 mm/min 78 MPa ASTM D638 Tensile Stress, brk, Type I, 5 mm/min 60 MPa ASTM D638 Tensile Strain, yld, Type I, 5 mm/min 44 % ASTM D638 Tensile Strain, brk, Type I, 5 mm/min % ASTM D638 6.8 Tensile Modulus, 5 mm/min 3100 MPa ASTM D638 134 ASTM D790 Flexural Strength, 1.3 mm/min, 50 mm span MPa Flexural Modulus, 1.3 mm/min, 50 mm span 3113 ASTM D790 MPa Tensile Stress, yield, 5 mm/min 78 MPa ISO 527 74 Tensile Stress, break, 5 mm/min MPa ISO 527 Tensile Strain, yield, 5 mm/min 2.6 % ISO 527 Tensile Strain, break, 5 mm/min 7.2 % ISO 527 Tensile Modulus, 1 mm/min 3080 MPa ISO 527 Flexural Strength, 2 mm/min 131 MPa ISO 178 Flexural Modulus, 2 mm/min 3120 MPa ISO 178 IMPACT (1) Izod Impact, notched, 23°C 30 J/m ASTM D256 26 Izod Impact, notched, -30°C J/m ASTM D256 Izod Impact, unnotched, 23°C 338 J/m ASTM D4812 Izod Impact, unnotched, -30°C ASTM D4812 320 J/m Izod Impact, notched 80*10*4 +23°C 3.8 kI/m² ISO 180/1A

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CHEMISTRY THAT MATTERS



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*4 -30°C	3.8	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	19.9	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	20.7	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	2.7	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	2.7	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	24	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	26	kJ/m²	ISO 179/1eU
THERMAL ⁽¹⁾			
HDT, 0.45 MPa, 3.2 mm, unannealed	132	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	119	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	132	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	120	°C	ISO 75/Af
CTE			
-40°C to 40°C, flow	7.8E-05	1/°C	ASTM E831
-40°C to 40°C, xflow	7.7E-05	1/°C	ASTM E831
-40°C to 85°C, flow	7.7E-05	1/°C	ASTM E831
-40°C to 85°C, xflow	7.9E-05	1/°C	ASTM E831
-40°C to 40°C, flow	7.4E-05	1/°C	ISO 11359-2
-40°C to 40°C, xflow	7.5E-05	1/°C	ISO 11359-2
-40°C to 85°C, flow	7.7E-05	1/°C	ISO 11359-2
-40°C to 85°C, xflow	7.9E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate A/50	144	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	138	°C	ASTM D1525
Vicat Softening Temp, Rate A/50	144	°C	ISO 306
Vicat Softening Temp, Rate B/50	138	°C	ISO 306
PHYSICAL ⁽¹⁾			
Specific Gravity	1.07		ASTM D792
Density	1.07	g/cm ³	ISO 1183
Melt Flow Rate, 280°C/5.0 kgf	18	g/10 min	ASTM D1238
Melt Flow Rate, 300°C/5.0 kgf	40	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 280°C/5.0 kg	16	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300°C/5.0 kg	38	cm³/10 min	ISO 1133
Water Absorption, (23°C/24hrs)	0.07	%	ISO 62-1
Mold Shrinkage, flow, 3.2 mm ⁽²⁾	0.76	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm ⁽²⁾	0.92	%	SABIC method
ELECTRICAL ⁽¹⁾			
Surface Resistivity	1.2E+17	Ω	ASTM D257
Volume Resistivity	8.1E+16	Ω.cm	ASTM D257
OPTICAL PROPERTIES (1)			
Gloss (60°)	153	‰	ASTM D2457
INJECTION MOLDING ⁽³⁾			
Drying Temperature	100 – 120	°C	
Drying Time	3 - 6	Hrs	
Melt Temperature	240 - 300	°C	
Nozzle Temperature	240 - 300	°C	
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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Front - Zone 3 Temperature	240 - 300	°C	
Middle - Zone 2 Temperature	240 - 300	°C	
Rear - Zone 1 Temperature	240 - 300	°C	
Mold Temperature	90 – 155	°C	
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.

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