

NORYL™ NH7111E resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

NORYL EXNL0280 is a glass fiber reinforced, injection moldable modified polyphenylene ether resin. Designed for good dimensional stability and low warpage, this resin also uses non-halogenated FR additives to achieve a V1 UL94 rating at 1.6 mm and V0 UL94 at 3.00mm with a CTI value of 400 V. NORYL EXNL0280 may be an excellent material candidate for application requiring electrically insulating properties, low moisture absorption, low warpage and thin wall flame resistance. Available in limited light grey colors

General Information			
Filler / Reinforcement	Glass fiber reinforced material		
Additive	Flame retardancy		
Features	Good dimensional stability		
	Low warpage		
	Low hygroscopicity		
	Insulation		
	Halogen-free		
	Flame retardancy		
Uses	Thin wall parts		
Appearance	Light gray		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.24	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/5.0 kg)	18	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	15.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.70	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.23	%	ISO 62
Equilibrium, 23°C, 50% RH	0.070	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	3600	MPa	ASTM D638
--	3790	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	69.0	MPa	ASTM D638
Yield	76.0	MPa	ISO 527-2/5
Fracture ³	66.6	MPa	ASTM D638
Fracture	75.0	MPa	ISO 527-2/5
Tensile Elongation			

Yield ⁴	3.2	%	ASTM D638
Yield	3.4	%	ISO 527-2/5
Fracture ⁵	4.5	%	ASTM D638
Fracture	3.6	%	ISO 527-2/5
Flexural Modulus			
50.0mm span ⁶	3570	MPa	ASTM D790
-- ⁷	3620	MPa	ISO 178
Flexural Stress			
--	127	MPa	ISO 178
Yield, 50.0mm span ⁸	120	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	26	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
23°C	45	J/m	ASTM D256
23°C ¹⁰	7.0	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	10.6	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, unannealed, 3.20mm	140	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹¹	140	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	149	°C	ASTM D1525 ¹²
--	155	°C	ISO 306/B120
Linear thermal expansion coefficient			
Flow: -40 to 40°C	4.4E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Lateral: -40 to 40°C	7.1E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	3.0E+13 - 5.0E+13	ohms	IEC 60093
Volume Resistivity	14 - 16	ohms · cm	IEC 60093
Dielectric Strength (3.20 mm, in Oil)	27	kV/mm	IEC 60243-1
Relative Permittivity (1 MHz)	2.97		IEC 60250
Comparative Tracking Index	400	V	IEC 60112
High Amp Arc Ignition (HAI)	PLC 4		UL 746
Hot-wire Ignition (HWI)	PLC 0		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.00 mm, Testing by SABIC	V-1		UL 94
3.00 mm, Testing by SABIC	V-0		UL 94
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
1.00 mm	775	°C	IEC 60695-2-13

2.00 mm	775	°C	IEC 60695-2-13
2.50 mm	775	°C	IEC 60695-2-13
3.00 mm	775	°C	IEC 60695-2-13

Injection	Nominal Value	Unit
Drying Temperature	100 - 120	°C
Drying Time	2.0 - 3.0	hr
Hopper Temperature	60.0 - 80.0	°C
Rear Temperature	240 - 260	°C
Middle Temperature	260 - 280	°C
Front Temperature	280 - 300	°C
Nozzle Temperature	260 - 280	°C
Processing (Melt) Temp	280 - 300	°C
Mold Temperature	80.0 - 120	°C

NOTE		
1.	5.0 mm/min	
2.	Type 1, 5.0 mm/min	
3.	Type 1, 5.0 mm/min	
4.	Type 1, 5.0 mm/min	
5.	Type 1, 5.0 mm/min	
6.	1.3 mm/min	
7.	2.0 mm/min	
8.	1.3 mm/min	
9.	80*10*4 sp=62mm	
10.	80*10*4	
11.	80*10*4 mm	
12.	标准 B (120°C/h), 载荷2 (50N)	

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