

NORYL™ NH6010B resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

NORYL NH6010B resin is a high performance, modified PPE-PS blend that exhibits an excellent balance of lower smoke production upon burning, nonhalogenated flame retardance and low specific gravity. This grade can be processed via extrusion or injection molding. NORYL NH6010B is available in custom colors and may be an excellent material candidate for use in building and construction and electrical markets.

General Information			
Additive	Flame retardancy		
Features	Low density		
	Low smoke		
	Halogen-free		
	Flame retardancy		
Uses	Electrical/Electronic Applications		
	Building materials		
	Architectural application field		
Appearance	Available colors		
Processing Method	Sheet extrusion molding		
	Profile extrusion molding		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.11	g/cm ³	ASTM D792
--	1.12	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (280°C/5.0 kg)	5.7	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	5.70	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.80	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.20	%	ISO 62
Equilibrium, 23°C, 50% RH	0.050	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2220	MPa	ASTM D638
--	2440	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	64.0	MPa	ASTM D638

Yield	64.0	MPa	ISO 527-2/50
Fracture ³	53.0	MPa	ASTM D638
Fracture	58.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	4.6	%	ASTM D638
Yield	4.7	%	ISO 527-2/50
Fracture ⁵	20	%	ASTM D638
Fracture	8.3	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2390	MPa	ASTM D790
-- ⁷	2360	MPa	ISO 178
Flexural Stress			
--	100	MPa	ISO 178
Yield, 50.0mm span ⁸	100	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	20	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	180	J/m	ASTM D256
23°C	300	J/m	ASTM D256
-30°C ¹⁰	15	kJ/m ²	ISO 180/1A
23°C ¹¹	19	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	52.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, unannealed, 3.20mm	122	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹²	124	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	143	°C	ASTM D1525, ISO 306/B50 10 ¹³
--	146	°C	ISO 306/B120
Linear thermal expansion coefficient			
Flow: -40 to 40°C	6.7E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Lateral: -40 to 40°C	6.7E-5	cm/cm/°C	ASTM E831, ISO 11359-2
RTI Elec	65.0	°C	UL 746
RTI Imp	65.0	°C	UL 746
RTI	65.0	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.3E+18	ohms	ASTM D257, IEC 60093
Volume Resistivity	7.6E+17	ohms·cm	ASTM D257, IEC 60093
Dielectric Strength			
3.20 mm, in Oil	34	kV/mm	ASTM D149
3.20mm, in oil	34	kV/mm	IEC 60243-1

Dielectric Constant (1 MHz)	2.78		ASTM D150, IEC 60250
Dissipation Factor (1 MHz)	2.9E-3		ASTM D150, IEC 60250
Comparative Tracking Index	225	V	IEC 60112
High Amp Arc Ignition (HAI)	PLC 1		UL 746
Hot-wire Ignition (HWI)	PLC 2		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.50 mm, Testing by SABIC)	V-0		UL 94
Glow Wire Flammability Index (1.50 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
3.00 mm	800	°C	IEC 60695-2-13
Oxygen Index	34	%	ISO 4589-2
Ds_4min	70		ISO 5659-2
F1 Class Smoke and Toxicity Rating	3.00	mm	NF F16-101
Flame Spread Index (1.52 mm)	15.0		ASTM E162
Heat Release, MAHRE	33.6	kW/m ²	ISO 5660-1
Lateral Flame Spread, CFE	20.0	kW/m ²	ISO 5658-2
M1 Flame Class Rating	2.00	mm	NF P 92501
NBS Smoke Density			ASTM E662
Flaming, 20 min : 3.20 mm	120		ASTM E662
Flaming, 4 min : 1.52 mm	30.0		ASTM E662
Flaming, 4 min : 3.20 mm	30.0		ASTM E662
Non-Flaming, 4 min : 1.52 mm	7.00		ASTM E662
Toxicity			
--	0.0200		ISO 5659-2
3.00 mm	21.8		NF X70-100
Extrusion instructions			

Profile Extrusion Parameters:

Adapter Temperature: 220 - 260 °C

Barrel - Zone 1 Temperature: 220 - 260 °C

Barrel - Zone 2 Temperature: 220 - 260 °C

Barrel - Zone 3 Temperature: 220 - 260 °C

Barrel - Zone 4 Temperature: 220 - 260 °C

Calibrator Temperature: 30 - 60 °C

Die Temperature: 220 - 260 °C

Drying Temperature: 95 - 105 °C

Drying Time: 2 - 4 hrs

Drying Time (Cumulative): 12 hrs

Hopper Temperature: 80 - 120 °C

Maximum Moisture Content: 0.07 %

Melt Temperature: 220 - 260 °C

Water Bath Temperature: 30 - 50 °C

Sheet Extrusion Parameters:

Adapter Temperature: 220 - 260 °C

Barrel - Zone 1 Temperature: 220 - 260 °C

Barrel - Zone 2 Temperature: 220 - 260 °C

Barrel - Zone 3 Temperature: 220 - 260 °C

Barrel - Zone 4 Temperature: 220 - 260 °C

Die Temperature: 220 - 260 °C

Drying Temperature: 95 - 105 °C

Drying Time: 2 - 4 hrs

Drying Time (Cumulative): 12 hrs

Maximum Moisture Content: 0.07 %

Melt Temperature: 220 - 260 °C

Roll Stack Temp - Bottom: 90 - 150 °C

Roll Stack Temp - Middle: 90 - 150 °C

Roll Stack Temp - Top: 90 - 150 °C

NOTE

1.	5.0 mm/min
2.	Type 1, 50mm/min
3.	Type 1, 50mm/min
4.	Type 1, 50mm/min
5.	Type 1, 50mm/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
12.	80*10*4 mm
13.	标准 B (120°C/h), 载荷2 (50N)

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