

NORYL™ NH4030B resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

NH4030B is a modified PPE-HIPS blend that presents an excellent balance of non halogenated flame retardance, lower smoke production upon burning and low specific gravity for light weight parts. NORYL NH4030B is available in custom colors and may be an excellent material candidate for applications requiring light weight parts and may be processed by injection molding or extrusion techniques.

General Information	
Additive	Flame retardancy
Features	Low density
	Low smoke
	Halogen-free
	Flame retardancy
RoHS Compliance	RoHS compliance
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, ISO 1183
Melt Mass-Flow Rate (MFR)			ASTM D1238
280°C/5.0 kg	18	g/10 min	ASTM D1238
300°C/5.0 kg	43	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
280°C/5.0 kg	17.6	cm ³ /10min	ISO 1133
300°C/5.0 kg	41.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.80	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.27	%	ISO 62
Equilibrium, 23°C, 50% RH	0.045	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2450	MPa	ASTM D638
--	2430	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	56.2	MPa	ASTM D638
Yield	54.0	MPa	ISO 527-2/50
Fracture ³	46.8	MPa	ASTM D638

Fracture	47.8	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	4.3	%	ASTM D638
Yield	4.0	%	ISO 527-2/50
Fracture ⁵	28	%	ASTM D638
Fracture	28	%	ISO 527-2, ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2400	MPa	ASTM D790
-- ⁷	2390	MPa	ISO 178
Flexural Stress			
--	90.0	MPa	ISO 178
Yield, 50.0mm span ⁸	90.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	19	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	120	J/m	ASTM D256
23°C	200	J/m	ASTM D256
-30°C ¹⁰	11	kJ/m ²	ISO 180/1A
23°C ¹¹	16	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	46.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, unannealed, 3.20mm	106	°C	ASTM D648
1.8 MPa, unannealed, 6.40mm	113	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹²	107	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	127	°C	ASTM D1525, ISO 306/B50 ¹³
--	129	°C	ISO 306/B120
Linear thermal expansion coefficient			ASTM E831, ISO 11359-2
Flow: -40 to 40°C	8.4E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Lateral: -40 to 40°C	8.5E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Flammability	Nominal Value	Unit	Test Method
Draeger Tube Toxicity ¹⁴			
Flaming : 1.52 mm	Pass		
Non-Flaming : 1.52 mm	Pass		
Flame Spread Index (1.52 mm)	15.0		ASTM E162
NBS Smoke Density			ASTM E662
Flaming, 20 min : 3.20 mm	126		ASTM E662
Flaming, 4 min : 1.52 mm	29.0		ASTM E662
Flaming, 4 min : 3.20 mm	35.0		ASTM E662
Non-Flaming, 4 min : 1.52 mm	7.00		ASTM E662

Vertical Burn Test			FAR 25.853
Test a (60 s, 1.52 mm), passes at	0.0	hr	FAR 25.853
Test b (12 s, 1.52 mm), passes at	4.00	sec	FAR 25.853

Extrusion instructions

Profile Extrusion Parameters:

Adapter Temperature: 215 - 250 °C

Barrel - Zone 1 Temperature: 215 - 250 °C

Barrel - Zone 2 Temperature: 215 - 250 °C

Barrel - Zone 3 Temperature: 215 - 250 °C

Barrel - Zone 4 Temperature: 215 - 250 °C

Calibrator Temperature: 30 - 60 °C

Die Temperature: 215 - 250 °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: 215 - 250 °C

Water Bath Temperature: 30 - 50 °C

Sheet Extrusion Parameters:

Adapter Temperature: 215 - 250 °C

Barrel - Zone 1 Temperature: 215 - 250 °C

Barrel - Zone 2 Temperature: 215 - 250 °C

Barrel - Zone 3 Temperature: 215 - 250 °C

Barrel - Zone 4 Temperature: 215 - 250 °C

Die Temperature: 215 - 250 °C

Drying Temperature: 95 - 105 °C

Drying Time: 2 - 4 hrs

Drying Time (Cumulative): 12 hrs

Maximum Moisture Content: 0.07 %

Melt Temperature: 215 - 250 °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) |
| 14. | Tested according to AITM 3.0005,
ABD0031 |

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