

NORYL™ BN9003G resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

PPE+PS blend. Unfilled. Blow molding. Excellent balance of impact and surface aesthetics. Suitable for automotive exterior components including spoilers.

General Information			
Features	Impact resistance, good		
	Excellent appearance		
Uses	Blow molding applications		
	Automotive exterior parts		
Processing Method	Extrusion blow molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.06	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (280°C/5.0 kg)	10	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	12.0	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal method
Flow ¹	0.55 - 0.75	%	Internal method
Flow: 3.20mm	0.55 - 0.75	%	Internal method
Transverse flow: 3.20mm	0.55 - 0.75	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.25	%	ISO 62
Equilibrium, 23°C, 50% RH	0.050	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ²	2240	MPa	ASTM D638
--	2170	MPa	ISO 527-2/1
Tensile Strength			
Yield ³	48.0	MPa	ASTM D638
Yield	47.0	MPa	ISO 527-2/50
Fracture ⁴	42.0	MPa	ASTM D638
Fracture	42.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁵	3.6	%	ASTM D638
Yield	3.4	%	ISO 527-2/50
Fracture ⁶	45	%	ASTM D638
Fracture	30	%	ISO 527-2/50

Flexural Modulus			
50.0mm span ⁷	2150	MPa	ASTM D790
-- ⁸	2190	MPa	ISO 178
Flexural Stress			
--	75.0	MPa	ISO 178
Yield, 50.0mm span ⁹	70.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹⁰			ISO 179/1eA
-30°C	12	kJ/m ²	ISO 179/1eA
23°C	26	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength ¹¹			ISO 179/1eU
-30°C	110	kJ/m ²	ISO 179/1eU
23°C	No Break		ISO 179/1eU
Notched Izod Impact			
-30°C	130	J/m	ASTM D256
23°C	320	J/m	ASTM D256
-30°C ¹²	10	kJ/m ²	ISO 180/1A
23°C ¹³	25	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	No Break		ASTM D4812, ISO 180/1U
-30°C ¹⁴	54	kJ/m ²	ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	40.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	124	°C	ASTM D648
0.45 MPa, unannealed, 64.0mm span ¹⁵	126	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 3.20mm	108	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹⁶	110	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	141	°C	ASTM D1525 ¹⁷
--	127	°C	ISO 306/B50
--	130	°C	ISO 306/B120
Linear thermal expansion coefficient			ASTM E831, ISO 11359-2
Flow: -40 to 40°C	8.6E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Lateral: -40 to 40°C	9.5E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Extrusion	Nominal Value	Unit	
Drying Temperature	82.0 - 87.0	°C	
Drying Time	2.0 - 4.0	hr	
Cylinder Zone 1 Temp.	226 - 258	°C	
Cylinder Zone 2 Temp.	231 - 258	°C	
Cylinder Zone 3 Temp.	237 - 258	°C	

Cylinder Zone 4 Temp.	237 - 258	°C
Cylinder Zone 5 Temp.	237 - 258	°C
Adapter Temperature	237 - 258	°C
Die Temperature	237 - 258	°C

Extrusion instructions

Head - Zone 6 - Top Temperature: 237 - 258 °C Head - Zone 7 - Bottom Temperature: 237 - 258 °C Head - Zone 7 - Middle Temperature: 237 - 258 °C
Melt Temperature (Parison): 237 - 258 °C Mold Temperature: 66 - 93 °C

NOTE

1.	Tensile Bar
2.	5.0 mm/min
3.	Type 1, 50mm/min
4.	Type 1, 50mm/min
5.	Type 1, 50mm/min
6.	Type 1, 50mm/min
7.	1.3 mm/min
8.	2.0 mm/min
9.	1.3 mm/min
10.	80*10*4 sp=62mm
11.	80*10*4 sp=62mm
12.	80*10*4
13.	80*10*4
14.	80*10*4
15.	80*10*4 mm
16.	80*10*4 mm
17.	标准 B (120°C/h), 载荷2 (50N)

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