

NORYL™ FXN121BK resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

NORYL FXN121BK is an unfilled modified polyphenylene ether resin suitable for injection molding. Designed to possess a unique low gloss surface appearance even when molded in polished tools, this resin uses non-chlorinated, non-brominated FR additives to achieve a V1 UL94 rating. FXN121BK is available in black only.

General Information			
Additive	Flame Retardant		
Features	Bromine Free		
	Chlorine Free		
	Flame Retardant		
	Low Gloss		
Appearance	Black		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.08	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (280°C/5.0 kg)	7.0	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	7.00	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Water Absorption			ISO 62
Saturation, 23°C	0.23	%	
Equilibrium, 23°C, 50% RH	0.060	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	119		ISO 2039-2
Ball Indentation Hardness (H 358/30)	105	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2300	MPa	ASTM D638
--	2350	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	64.0	MPa	ASTM D638
Yield	63.0	MPa	ISO 527-2/50
Break ³	53.0	MPa	ASTM D638
Break	52.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	4.8	%	ASTM D638
Yield	4.6	%	ISO 527-2/50

Break ⁵	30	%	ASTM D638
Break	30	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2400	MPa	ASTM D790
-- ⁷	2300	MPa	ISO 178
Flexural Stress			
--	92.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	97.0	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	60.0	mg	Internal Method
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹			ISO 179/1eA
-30°C	7.0	kJ/m ²	
23°C	14	kJ/m ²	
Notched Izod Impact			
-30°C	70	J/m	ASTM D256
23°C	120	J/m	ASTM D256
-30°C ¹⁰	7.0	kJ/m ²	ISO 180/1A
23°C ¹¹	11	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	41.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	133	°C	ASTM D648
0.45 MPa, Unannealed, 64.0 mm Span ¹²	133	°C	ISO 75-2/Bf
1.8 MPa, Unannealed, 3.20 mm	119	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹³	118	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	139	°C	ASTM D1525 ¹⁴
--	138	°C	ISO 306/B50
--	142	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			ASTM E831, ISO 11359-2
Flow : -40 to 40°C	8.2E-5	cm/cm/°C	
Transverse : -40 to 40°C	8.5E-5	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	1.0E+15	ohms · cm	IEC 60093
Electric Strength (3.20 mm, in Oil)	16	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
50 Hz	2.70		
60 Hz	2.70		
1 MHz	2.70		

Dissipation Factor		IEC 60250	
50 Hz	4.0E-4		
60 Hz	4.0E-4		
1 MHz	2.0E-3		
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.50 mm)	V-1		UL 94
Glow Wire Flammability Index (3.20 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (3.00 mm)	700	°C	IEC 60695-2-13
Oxygen Index	30	%	ISO 4589-2
Optical	Nominal Value	Test Method	
Gardner Gloss (60°, Untextured)	20	ASTM D523	
Injection	Nominal Value	Unit	
Drying Temperature	70.0 to 90.0	°C	
Drying Time	2.0 to 3.0	hr	
Hopper Temperature	60.0 to 80.0	°C	
Rear Temperature	200 to 220	°C	
Middle Temperature	240 to 260	°C	
Front Temperature	260 to 285	°C	
Nozzle Temperature	260 to 280	°C	
Processing (Melt) Temp	265 to 285	°C	
Mold Temperature	40.0 to 70.0	°C	
NOTE			
1.	5.0 mm/min		
2.	Type I, 50 mm/min		
3.	Type I, 50 mm/min		
4.	Type I, 50 mm/min		
5.	Type I, 50 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		
12.	80*10*4 mm		
13.	80*10*4 mm		
14.	Rate B (120°C/h), Loading 2 (50 N)		

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