

NORYL™ GFN3F resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

PPE+PS blend. 30% Glass reinforced. FDA compliance (restrictions apply). Low water absorption. Hydrolytic stability. Dimensional stability. Suitable for fluid engineering applications including pump housings, pump impellers and water meter components.

General Information			
Filler / Reinforcement	Glass fiber reinforced material, 30% filler by weight		
Features	Good dimensional stability		
	Hydrolysis stability		
	Low or no water absorption		
Uses	Pump parts		
	Shell		
Agency Ratings	FDA not rated		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.31	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (280°C/5.0 kg)	3.2	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	2.70	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.10 - 0.40	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.10	%	ISO 62
Equilibrium, 23°C, 50% RH	0.040	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	8600	MPa	ASTM D638
--	8200	MPa	ISO 527-2/1
Tensile Strength			
Fracture ²	130	MPa	ASTM D638
Fracture	110	MPa	ISO 527-2/50
Tensile Elongation			
Fracture ³	3.0	%	ASTM D638
Fracture	2.5	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁴	7200	MPa	ASTM D790
-- ⁵	6800	MPa	ISO 178
Flexural Stress			

--	160	MPa	ISO 178
Yield, 50.0mm span ⁶	160	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁷ (23°C)	8.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	120	J/m	ASTM D256
23°C	100	J/m	ASTM D256
-30°C ⁸	10	kJ/m ²	ISO 180/1A
23°C ⁹	11	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	590	J/m	ASTM D4812
23°C ¹⁰	30	kJ/m ²	ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	20.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	147	°C	ASTM D648
1.8 MPa, unannealed, 3.20mm	139	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹¹	139	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	147	°C	ASTM D1525, ISO 306/B50 10 ¹²
--	149	°C	ISO 306/B120
Linear thermal expansion coefficient			
Flow: -40 to 40°C	2.1E-5	cm/cm/°C	ASTM E831
Flow: -40 to 40°C	2.3E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	7.5E-5	cm/cm/°C	ASTM E831
Lateral: -40 to 40°C	7.0E-5	cm/cm/°C	ISO 11359-2
Injection	Nominal Value	Unit	
Drying Temperature	110 - 121	°C	
Drying Time	3.0 - 4.0	hr	
Drying Time, Maximum	8.0	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	30 - 70	%	
Rear Temperature	266 - 316	°C	
Middle Temperature	277 - 321	°C	
Front Temperature	288 - 327	°C	
Nozzle Temperature	299 - 327	°C	
Processing (Melt) Temp	299 - 327	°C	
Mold Temperature	82.2 - 110	°C	
Back Pressure	0.345 - 0.689	MPa	
Screw Speed	20 - 100	rpm	
NOTE			

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

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