

NORYL™ GFN1 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

PPE+PS blend. 10% Glass reinforced. FDA compliance (restrictions apply). Low water absorption. Hydrolytic stability. Dimensional stability. Suitable for fluid engineering applications including water filter and water meter components.

General Information			
UL YellowCard	E45587-237019	E207780-228544	
Filler / Reinforcement	Glass fiber reinforced material, 10% filler by weight		
Features	Good dimensional stability		
	Hydrolysis stability		
	Low or no water absorption		
Uses	Engineering application		
	Filter material		
Agency Ratings	FDA not rated		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.17	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (280°C/5.0 kg)	4.0	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	4.00	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.55 - 0.66	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.12	%	ISO 62
Equilibrium, 23°C, 50% RH	0.040	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	4400	MPa	ASTM D638
--	3900	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	75.0	MPa	ASTM D638
Yield	60.0	MPa	ISO 527-2/50
Fracture ³	75.0	MPa	ASTM D638
Fracture	60.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	3.5	%	ASTM D638
Yield	4.5	%	ISO 527-2/50
Fracture ⁵	3.5	%	ASTM D638

Fracture	4.5	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	3400	MPa	ASTM D790
-- ⁷	3700	MPa	ISO 178
Flexural Stress			
--	115	MPa	ISO 178
Yield, 50.0mm span ⁸	105	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	8.0	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	80	J/m	ASTM D256
23°C	84	J/m	ASTM D256
-30°C ¹⁰	9.0	kJ/m ²	ISO 180/1A
23°C ¹¹	10	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	410	J/m	ASTM D4812
-30°C ¹²	30	kJ/m ²	ISO 180/1U
23°C ¹³	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	135	°C	ASTM D648
1.8 MPa, unannealed, 3.20mm	130	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹⁴	129	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	138	°C	ASTM D1525, ISO 306/B50 ¹⁵
--	140	°C	ISO 306/B120
Linear thermal expansion coefficient			
Flow: -40 to 40°C	4.5E-5	cm/cm/°C	ASTM E831
Flow: -40 to 40°C	3.8E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	8.2E-5	cm/cm/°C	ASTM E831
Lateral: -40 to 40°C	8.5E-5	cm/cm/°C	ISO 11359-2
Injection	Nominal Value	Unit	
Drying Temperature	104 - 110	°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	260 - 304	°C	
Middle Temperature	271 - 310	°C	
Front Temperature	282 - 316	°C	

Nozzle Temperature	293 - 316	°C
Processing (Melt) Temp	293 - 316	°C
Mold Temperature	76.7 - 104	°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.	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
13.	80*10*4
14.	80*10*4 mm
15.	标准 B (120°C/h), 载荷2 (50N)

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China



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