

NORYL™ GFN2 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

PPE+PS blend. 20% Glass reinforced. FDA compliance (restrictions apply). Low water absorption. Hydrolytic stability. Dimensional stability. Suitable for fluid engineering applications including pump housings and impellers, valve components and others.

General Information			
UL YellowCard	E45587-237020	E207780-228545	
Filler / Reinforcement	Glass fiber reinforced material, 20% filler by weight		
Features	Good dimensional stability		
	Hydrolysis stability		
	Low or no water absorption		
Uses	Pump parts		
	Valve/valve components		
	Engineering application		
	Shell		
Agency Ratings	FDA not rated		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.23	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/5.0 kg)	12	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (280°C/5.0 kg)	2.40	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow	0.20 - 0.40	%	Internal method
Water Absorption			
24 hr	0.060	%	ASTM D570
23°C, 24 hr	0.12	%	ISO 62
Equilibrium, 23°C, 50% RH	0.040	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	6500	MPa	ASTM D638
--	6000	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	100	MPa	ASTM D638
Yield ³	88.0	MPa	Internal method
Yield	90.0	MPa	ISO 527-2/5
Tensile Elongation			
Yield ⁴	6.0 - 8.0	%	Internal method

Fracture ⁵	3.0	%	ASTM D638
Fracture	3.0	%	ISO 527-2/5
Flexural Modulus			
100mm span ⁶	5570	MPa	ASTM D790
-- ⁷	5400	MPa	ISO 178
Flexural Stress			
--	150	MPa	ISO 178
Yield, 100mm span ⁸	131	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			
23°C	88	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	550	J/m	ASTM D4812
23°C ¹²	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			
1.8 MPa, unannealed, 3.20mm	137	°C	ASTM D648
1.8 MPa, unannealed, 6.40mm	138	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span ¹³	135	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	140	°C	ISO 306/B50
--	147	°C	ISO 306/B120
CLTE - Flow (-30 to 30°C)	2.8E-5 - 4.5E-5	cm/cm/°C	ASTM E831
Flammability	Nominal Value		Test Method
Flame Rating (1.50 mm)	HB		UL 94
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, 5.0 mm/min	
3.	Type 1, 10mm/min	
4.	Type 1, 10mm/min	
5.	Type 1, 5.0 mm/min	
6.	2.6 mm/min	
7.	2.0 mm/min	
8.	2.6 mm/min	
9.	80*10*4 sp=62mm	
10.	80*10*4	
11.	80*10*4	
12.	80*10*4	
13.	80*10*4 mm	

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