

NORYL™ GFN1 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

PPE+PS blend. 10% Glass reinforced. NSF 61 listing in several colors (restrictions apply). 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	E121562-221234		
Filler / Reinforcement	Glass Fiber,10% Filler by Weight		
Features	Good Dimensional Stability		
	Hydrolytically Stable		
	Low to No Water Absorption		
Agency Ratings	FDA Unspecified Rating		
	NSF 61		
Processing Method	Injection Molding		
Multi-Point Data	Coefficient of Thermal Expansion vs. Temperature (ASTM E831)		
	Flexural DMA (ASTM D4065)		
	Pressure-Volume-Temperature (PVT - Zoller Method)		
	Shear DMA (ASTM D4065)		
	Specific Heat vs. Temperature (ASTM D3417)		
	Tensile Creep (ASTM D2990)		
	Tensile Fatigue		
	Tensile Stress vs. Strain (ASTM D638)		
	Thermal Conductivity vs. Temperature (ASTM E1530)		
	Viscosity vs. Shear Rate (ASTM D3835)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.13	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/5.0 kg)	17	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/5.0 kg)	16.4	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.20 to 0.50	%	Internal Method
Water Absorption (24 hr)	0.060	%	ASTM D570
Outdoor Suitability	f1		UL 746C
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (L-Scale)	104		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			

-- ¹	4350	MPa	ASTM D638
--	4400	MPa	ISO 527-2/1
Tensile Strength			
Break ²	63.0	MPa	ASTM D638
Break	64.0	MPa	ISO 527-2
Tensile Elongation (Break)	3.0	%	ASTM D638, ISO 527-2
Flexural Modulus			
50.0 mm Span ³	3840	MPa	ASTM D790
100 mm Span ⁴	3590	MPa	ASTM D790
--	4160	MPa	ISO 178
Flexural Stress			
--	122	MPa	ISO 178
Yield, 50.0 mm Span ⁵	116	MPa	ASTM D790
Yield, 100 mm Span ⁶	108	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/2C
-30°C	9.0	kJ/m ²	
23°C	11	kJ/m ²	
Charpy Unnotched Impact Strength ⁷			ISO 179/1eU
-30°C	33	kJ/m ²	
23°C	35	kJ/m ²	
Notched Izod Impact			
-30°C	100	J/m	ASTM D256
23°C	120	J/m	ASTM D256
-30°C ⁸	9.4	kJ/m ²	ISO 180/1A
23°C ⁹	11	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	450	J/m	ASTM D4812
-30°C ¹⁰	25	kJ/m ²	ISO 180/1U
23°C ¹¹	28	kJ/m ²	ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	21.7	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	131	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span ¹²	132	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	122	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	125	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ¹³	124	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	131	°C	ISO 306/B50
--	134	°C	ISO 306/B120

CLTE			ASTM E831
Flow : -40 to 40°C	5.1E-5	cm/cm/°C	
Transverse : -40 to 40°C	7.1E-5	cm/cm/°C	
RTI Elec	90.0	°C	UL 746
RTI Imp	90.0	°C	UL 746
RTI Str	90.0	°C	UL 746
Electrical	Nominal Value		Test Method
Dielectric Constant (1 MHz)	2.90		ASTM D150
Dissipation Factor (1 MHz)	1.4E-3		ASTM D150
Arc Resistance ¹⁴	PLC 7		ASTM D495
High Amp Arc Ignition (HAI)	PLC 4		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 4		UL 746
Hot-wire Ignition (HWI)	PLC 5		UL 746
Flammability	Nominal Value		Test Method
Flame Rating (1.47 mm)	HB		UL 94
Injection	Nominal Value	Unit	
Drying Temperature	104 to 110	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	8.0	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	30 to 70	%	
Rear Temperature	260 to 304	°C	
Middle Temperature	271 to 310	°C	
Front Temperature	282 to 316	°C	
Nozzle Temperature	293 to 316	°C	
Processing (Melt) Temp	293 to 316	°C	
Mold Temperature	76.7 to 104	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	20 to 100	rpm	
NOTE			
1.	5.0 mm/min		
2.	Type I, 5.0 mm/min		
3.	1.3 mm/min		
4.	2.6 mm/min		
5.	1.3 mm/min		
6.	2.6 mm/min		
7.	80*10*4 sp=62mm		
8.	80*10*4		
9.	80*10*4		
10.	80*10*4		
11.	80*10*4		
12.	120*10*4 mm		

13.	120*10*4 mm
14.	Tungsten Electrode

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