

NORYL™ GFN2 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

PPE+PS blend. 20% Glass reinforced. UL746C F1. 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 pump housings and impellers, valve components and others.

General Information			
UL YellowCard	E121562-221161		
Filler / Reinforcement	Glass Fiber,20% 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)		
	Elastic Modulus vs Temperature (ASTM D4065)		
	Flexural DMA (ASTM D4065)		
	Instrumented Impact (Energy) (ASTM D3763)		
	Instrumented Impact (Load) (ASTM D3763)		
	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	1.20	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/5.0 kg)	9.0	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/5.0 kg)	8.10	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)	106		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	6200	MPa	ASTM D638
--	7070	MPa	ISO 527-2/1
Tensile Strength			
Break ²	90.0	MPa	ASTM D638
Break	97.3	MPa	ISO 527-2/5
Tensile Elongation			
Break ³	2.6	%	ASTM D638
Break	2.5	%	ISO 527-2/5
Flexural Modulus			
50.0 mm Span ⁴	5800	MPa	ASTM D790
-- ⁵	6540	MPa	ISO 178
Flexural Stress			
--	167	MPa	ISO 178
Yield, 50.0 mm Span ⁶	160	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	12	kJ/m ²	ISO 179/2C
Notched Izod Impact			
-40°C	96	J/m	ASTM D256
23°C	120	J/m	ASTM D256
23°C ⁷	11	kJ/m ²	ISO 180/1A
Unnotched Izod Impact (23°C)	650	J/m	ASTM D4812
Instrumented Dart Impact (23°C, Total Energy)	22.6	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	141	°C	ASTM D648
0.45 MPa, Unannealed, 6.40 mm	143	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span ⁸	143	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	135	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	138	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span ⁹	137	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	143	°C	ISO 306/B50
--	146	°C	ISO 306/B120
CLTE			
Flow : -40 to 40°C	2.9E-5	cm/cm/°C	
Transverse : -40 to 40°C	8.3E-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	Unit	Test Method
Dielectric Strength (3.20 mm, in Oil)	17	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
50 Hz	2.86		
60 Hz	2.86		
Dissipation Factor			ASTM D150
50 Hz	8.0E-4		
60 Hz	8.0E-4		
Arc Resistance ¹⁰	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 4		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.47 mm)	HB		UL 94
Oxygen Index	26	%	ASTM D2863
Injection	Nominal Value	Unit	
Drying Temperature	110 to 121	°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	266 to 316	°C	
Middle Temperature	277 to 321	°C	
Front Temperature	288 to 327	°C	
Nozzle Temperature	299 to 327	°C	
Processing (Melt) Temp	299 to 327	°C	
Mold Temperature	82.2 to 110	°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.	Type I, 5.0 mm/min		
4.	1.3 mm/min		
5.	2.0 mm/min		
6.	1.3 mm/min		
7.	80*10*4		
8.	120*10*4 mm		
9.	120*10*4 mm		
10.	Tungsten Electrode		

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