

# NORYL™ GFN2 resin

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## General Information

### Product Description

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

Material Status	• Commercial: Active
Availability	• Asia Pacific
Filler / Reinforcement	• Glass Fiber, 20% Filler by Weight
Features	• Good Dimensional Stability • Hydrolytically Stable • Low to No Water Absorption
Uses	• Engineered Applications • Pump Parts • Housings • Valves/Valve Parts
Agency Ratings	• FDA Unspecified Rating
Processing Method	• Injection Molding

## ASTM & ISO Properties <sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.23		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)	0.146	in <sup>3</sup> /10min	ISO 1133
Molding Shrinkage - Flow	2.0E-3 to 4.0E-3	in/in	Internal Method
Water Absorption (24 hr)	0.060	%	ASTM D570
Water Absorption (73°F, 24 hr)	0.12	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.040	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus <sup>2</sup>	943000	psi	ASTM D638
Tensile Modulus	870000	psi	ISO 527-2/1
Tensile Strength			
Yield <sup>3</sup>	14500	psi	ASTM D638
Yield <sup>4</sup>	12800	psi	Internal Method
Tensile Stress (Yield)	13100	psi	ISO 527-2/5
Tensile Elongation <sup>4</sup> (Yield)	6.0 to 8.0	%	Internal Method
Tensile Elongation <sup>3</sup> (Break)	3.0	%	ASTM D638
Tensile Strain (Break)	3.0	%	ISO 527-2/5
Flexural Modulus <sup>5</sup> (3.94 in Span)	808000	psi	ASTM D790
Flexural Modulus <sup>6</sup>	783000	psi	ISO 178
Flexural Stress <sup>6, 7</sup>	21800	psi	ISO 178
Flexural Strength <sup>5</sup> (Yield, 3.94 in Span)	19000	psi	ASTM D790

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## SABIC Innovative Plastics Asia Pacific - Polyphenylene Ether + PS

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength <sup>8</sup> (73°F)	3.8	ft-lb/in <sup>2</sup>	ISO 179/1eA
Notched Izod Impact (73°F)	1.6	ft-lb/in	ASTM D256
Notched Izod Impact Strength <sup>9</sup>			ISO 180/1A
-22°F	4.3	ft-lb/in <sup>2</sup>	
73°F	4.8	ft-lb/in <sup>2</sup>	
Unnotched Izod Impact (73°F)	10	ft-lb/in	ASTM D4812
Unnotched Izod Impact Strength <sup>9</sup> (73°F)	14	ft-lb/in <sup>2</sup>	ISO 180/1U
Instrumented Dart Impact (73°F, Total Energy)	177	in-lb	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed, 0.126 in	279	°F	
264 psi, Unannealed, 0.252 in	280	°F	
Heat Deflection Temperature <sup>10</sup>			ISO 75-2/Af
264 psi, Unannealed, 2.52 in Span	275	°F	
Vicat Softening Temperature			
--	284	°F	ISO 306/B50
--	297	°F	ISO 306/B120
CLTE - Flow (-22 to 86°F)	1.6E-5 to 2.5E-5	in/in/°F	ASTM E831
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.0591 in)	HB		UL 94

### Processing Information

Injection	Nominal Value	Unit
Drying Temperature	230 to 250	°F
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	510 to 600	°F
Middle Temperature	530 to 610	°F
Front Temperature	550 to 620	°F
Nozzle Temperature	570 to 620	°F
Processing (Melt) Temp	570 to 620	°F
Mold Temperature	180 to 230	°F
Back Pressure	50.0 to 100	psi
Screw Speed	20 to 100	rpm

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### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.
<sup>2</sup> 0.20 in/min
<sup>3</sup> Type I, 0.20 in/min
<sup>4</sup> Type I, 0.39 in/min
<sup>5</sup> 0.10 in/min
<sup>6</sup> 0.079 in/min
<sup>7</sup> Yield
<sup>8</sup> 80*10*4 sp=62mm
<sup>9</sup> 80*10*4
<sup>10</sup> 80*10*4 mm

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