

NORYL™ GFN1 resin

Friday, March 20, 2015

General Information

Product Description

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

Material Status	• Commercial: Active
Availability	• Asia Pacific
Filler / Reinforcement	• Glass Fiber, 10% Filler by Weight
Features	• Good Dimensional Stability • Hydrolytically Stable • Low to No Water Absorption
Uses	• Engineered Applications • Filtration Media
Agency Ratings	• FDA Unspecified Rating
Processing Method	• Injection Molding

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.17		ASTM D792
Density	1.17	g/cm ³	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)	0.244	in ³ /10min	ISO 1133
Molding Shrinkage - Flow (0.126 in)	5.5E-3 to 6.6E-3	in/in	Internal Method
Water Absorption (Saturation, 73°F)	0.12	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.040	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ²	638000	psi	ASTM D638
Tensile Modulus	566000	psi	ISO 527-2/1
Tensile Strength ³ (Yield)	10900	psi	ASTM D638
Tensile Stress (Yield)	8700	psi	ISO 527-2/50
Tensile Strength ³ (Break)	10900	psi	ASTM D638
Tensile Stress (Break)	8700	psi	ISO 527-2/50
Tensile Elongation ³ (Yield)	3.5	%	ASTM D638
Tensile Strain (Yield)	4.5	%	ISO 527-2/50
Tensile Elongation ³ (Break)	3.5	%	ASTM D638
Tensile Strain (Break)	4.5	%	ISO 527-2/50
Flexural Modulus ⁴ (1.97 in Span)	493000	psi	ASTM D790
Flexural Modulus ⁵	537000	psi	ISO 178
Flexural Stress ^{5,6}	16700	psi	ISO 178
Flexural Strength ⁴ (Yield, 1.97 in Span)	15200	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 ⁷ (73°F)	3.8	ft-lb/in ²	ISO 179/1eA
Notched Izod Impact			ASTM D256
-22°F	1.5	ft-lb/in	
73°F	1.6	ft-lb/in	
Notched Izod Impact Strength ⁸			ISO 180/1A
-22°F	4.3	ft-lb/in ²	
73°F	4.8	ft-lb/in ²	
Unnotched Izod Impact (73°F)	7.7	ft-lb/in	ASTM D4812
Unnotched Izod Impact Strength ⁸			ISO 180/1U
-22°F	14	ft-lb/in ²	
73°F	14	ft-lb/in ²	
Instrumented Dart Impact (73°F, Total Energy)	177	in-lb	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
66 psi, Unannealed, 0.126 in	275	°F	
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed, 0.126 in	266	°F	
Heat Deflection Temperature ⁹			ISO 75-2/ Af
264 psi, Unannealed, 2.52 in Span	264	°F	
Vicat Softening Temperature	280	°F	ASTM D1525 ¹⁰
Vicat Softening Temperature			
--	280	°F	ISO 306/B50
--	284	°F	ISO 306/B120
CLTE - Flow (-40 to 104°F)	2.5E-5	in/in/°F	ASTM E831
CLTE - Flow (-40 to 104°F)	2.1E-5	in/in/°F	ISO 11359-2
CLTE - Transverse (-40 to 104°F)	4.6E-5	in/in/°F	ASTM E831
CLTE - Transverse (-40 to 104°F)	4.7E-5	in/in/°F	ISO 11359-2

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	220 to 230	°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	500 to 580	°F
Middle Temperature	520 to 590	°F
Front Temperature	540 to 600	°F
Nozzle Temperature	560 to 600	°F
Processing (Melt) Temp	560 to 600	°F
Mold Temperature	170 to 220	°F
Back Pressure	50.0 to 100	psi
Screw Speed	20 to 100	rpm

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Notes

¹ Typical properties: these are not to be construed as specifications.

² 0.20 in/min

³ Type I, 2.0 in/min

⁴ 0.051 in/min

⁵ 0.079 in/min

⁶ Yield

⁷ 80*10*4 sp=62mm

⁸ 80*10*4

⁹ 80*10*4 mm

¹⁰ Rate B (120°C/h), Loading 2 (50 N)

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