

# NORYL™ RESIN GFN2F

REGION ASIA

## DESCRIPTION

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.

## TYPICAL PROPERTY VALUES

Revision 20181012

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	100	MPa	ASTM D 638
Tensile Stress, yld, Type I, 10 mm/min	88	MPa	SABIC - Japan Method
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D 638
Tensile Strain, yld, Type I, 10 mm/min	6 – 8	%	SABIC - Japan Method
Tensile Modulus, 5 mm/min	6500	MPa	ASTM D 638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	131	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	5570	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	90	MPa	ISO 527
Tensile Strain, break, 5 mm/min	3	%	ISO 527
Tensile Modulus, 1 mm/min	6000	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	150	MPa	ISO 178
Flexural Modulus, 2 mm/min	5400	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	550	J/m	ASTM D 4812
Izod Impact, notched, 23°C	88	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	20	J	ASTM D 3763
Izod Impact, unnotched 80°10°4 +23°C	30	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80°10°4 +23°C	10	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80°10°4 -30°C	9	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80°10°4 sp=62mm	8	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
HDT, 1.82 MPa, 3.2mm, unannealed	137	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	138	°C	ASTM D 648
CTE, -30°C to 30°C	0.000028 – 0.000045	1/°C	TMA
Vicat Softening Temp, Rate B/50	140	°C	ISO 306
Vicat Softening Temp, Rate B/120	147	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80°10°4 sp=64mm	135	°C	ISO 75/Af
<b>PHYSICAL</b>			
Specific Gravity	1.23	-	ASTM D 792
Water Absorption, 24 hours	0.06	%	ASTM D 570
Mold Shrinkage, flow	0.2 – 0.4	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	11.7	g/10 min	ASTM D 1238
Water Absorption, 23°C/24hrs	0.12	%	ISO 62-1

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Moisture Absorption (23°C / 50% RH)	0.04	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	2	cm <sup>3</sup> /10 min	ISO 1133
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94HB Flame Class Rating	1.5	mm	UL 94
<b>INJECTION MOLDING</b>			
Drying Temperature	110 – 120	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	8	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	300 – 325	°C	
Nozzle Temperature	300 – 325	°C	
Front - Zone 3 Temperature	290 – 325	°C	
Middle - Zone 2 Temperature	275 – 320	°C	
Rear - Zone 1 Temperature	265 – 315	°C	
Mold Temperature	80 – 110	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	

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