NORYL™ RESIN GFN20F

REGION ASIA

DESCRIPTION

NORYL™ GFN20F resin is a 20% glass reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). This injection moldable grade exhibits very low moisture absorption, high strength, hydrolytic stability, Low warpage, low specific gravity, and dimensional stability. NORYL GFN20F carries a UL746C outdoor suitability rating of F1 along with FDA food contact compliance and NSF 61 listings in several colors. The properties of this material makes it an excellent candidate for water management applications such as water filter and meter components, pump housings / impellers, shower + faucet, and valves.*See NORYL GFN20 resin for NON FDA / NSF version.

TYPICAL PROPERTY VALUES

Revision 20191004

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
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
IMPACT			
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/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	10	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	9	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	8	kJ/m²	ISO 179/1eA
THERMAL			
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
Relative Temp Index, Elec (1)	90	°C	UL 746B
Relative Temp Index, Mech w/impact (1)	90	°C	UL 746B
Relative Temp Index, Mech w/o impact (1)	90	°C	UL 746B
PHYSICAL			
Specific Gravity	1.23	-	ASTM D 792

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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
Moisture Absorption (23°C / 50% RH)	0.04	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	2	cm³/10 min	ISO 1133
ELECTRICAL			
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 4	≥1.5	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥1.5	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	≥3	mm	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
FLAME CHARACTERISTICS (1)			
UL Yellow Card Link	E207780-228545	-	-
UL Yellow Card Link 2	E45587-237020	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	mm	UL 94
UV-light, water exposure/immersion	F1	-	UL 746C
INJECTION MOLDING			
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	%	

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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