NORYL™ RESIN GFN1720

REGION EUROPE

DESCRIPTION

NORYL™ GFN1720 resin is a 20% glass reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). This injection moldable grade was developed for high heat applications and exhibits a good balance of heat resistance, strrength, and electrical performance. NORYL GFN1720 resin is an excellent candidate for applications requirinng electrically insulating properties, such as ignition coils and bobbins.

TYPICAL PROPERTY VALUES

Revision 20190307

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	90	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	90	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	2.5	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D 638
Tensile Modulus, 5 mm/min	5500	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	145	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	4800	MPa	ASTM D 790
Taber Abrasion, CS-17, 1 kg	45	mg/1000cy	SABIC method
Tensile Stress, yield, 5 mm/min	90	MPa	ISO 527
Tensile Stress, break, 5 mm/min	90	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2	%	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	6000	MPa	ISO 527
Flexural Stress, break, 2 mm/min	135	MPa	ISO 178
Flexural Modulus, 2 mm/min	4500	MPa	ISO 178
Ball Indentation Hardness, H358/30	100	MPa	ISO 2039-1
IMPACT			
Izod Impact, notched, 23°C	60	J/m	ASTM D 256
Izod Impact, notched, -30°C	50	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	14	J	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	25	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	25	kJ/m²	ISO 180/1U
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	25	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	25	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	181	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	171	°C	ASTM D 648
CTE, -40°C to 40°C, flow	4.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	5.E-05	1/°C	ASTM E 831
Thermal Conductivity	0.26	W/m-°C	ISO 8302
CTE, 23°C to 80°C, flow	3.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Ball Pressure Test, approximate maximum	165	°C	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	180	°C	ISO 306
Vicat Softening Temp, Rate B/50	170	°C	ISO 306
Vicat Softening Temp, Rate B/120	180	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	170	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	160	°C	ISO 75/Ae
Relative Temp Index, Elec [1]	65	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	65	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	65	°C	UL 746B
PHYSICAL			
Specific Gravity	1.24	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow	0.2 – 0.4	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.2 – 0.4	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	4.5	g/10 min	ASTM D 1238
Density	1.24	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.15	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 300°C/10.0 kg	11	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 0.8 mm	30	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	26	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.6	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.006	-	IEC 60250
Dissipation Factor, 1 MHz	0.002	-	IEC 60250
Comparative Tracking Index [2]	200	V	IEC 60112
Relative Permittivity, 50/60 Hz	2.7	-	IEC 60250
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E45329-236755	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at [2]	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	23	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	110 – 120	°C	
Drying Time	2 – 4	hrs	
Melt Temperature	290 – 330	°C	
Nozzle Temperature	290 – 310	°C	
Front - Zone 3 Temperature	310 – 330	°C	
Middle - Zone 2 Temperature	290 – 310	°C	
Rear - Zone 1 Temperature	270 – 290	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	80 – 120	°C	

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(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.

(2) Value shown here is based on internal measurement.

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