SABIC Innovative Plastics™

Noryl* Resin GFN1720

Americas: COMMERCIAL

Noryl* GFN1720 is a 20% glass fiber reinforced, injection moldable grade. This modified polyphenylene ether resin is designed to deliver a balance of heat, strength and electrical properties. Noryl GFN1720 is available in multiple colors and may be an excellent material candidate for ignition coils, bobbins and other application requiring electrically insulating properties.

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
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
Hardness, H358/30	100	MPa	ISO 2039-1
IMPACT	Value	Unit	Standard
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	Value	Unit	Standard
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
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	65	°C	UL 746B
Relative Temp Index, Mech w/impact	65	°C	UL 746B
Relative Temp Index, Mech w/o impact	65	°C	UL 746B
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.24	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow (2)	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	Value	Unit	Standard
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, 50/60 Hz	2.7	-	IEC 60250
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	200	V	IEC 60112
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Recognized, 94HB Flame Class Rating (3)	1.5	mm	UL 94
UL Recognized, 94HB Flame Class Rating 2nd value (3)	3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	23	%	ISO 4589

Source GMD, last updated:01/19/2007

Processing

Parameter Injection Molding	Value	Unit
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

Source GMD, last updated:01/19/2007

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR (LOCAL SALES OFFICE) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.
(2) Only typical data for selection purposes. Not to be used for part or tool design.
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.