

Noryl* Resin SE1GFN2

Asia Pacific: COMMERCIAL

PPE+PS blend. 20% Glass reinforced. Non-brominated, non-chlorinated FR system. UL94 V1 listing. Dielectric strength. Dimensional stability. Suitable for E/E applications.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
MECHANICAL			
Tensile Stress, brk, Type I, 50 mm/min	120	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	3	%	ASTM D 638
Tensile Modulus, 5 mm/min	7100	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	140	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	5500	MPa	ASTM D 790
Tensile Stress, break, 50 mm/min	100	MPa	ISO 527
Tensile Strain, break, 50 mm/min	2.5	%	ISO 527
Tensile Modulus, 1 mm/min	6400	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	150	MPa	ISO 178
Flexural Modulus, 2 mm/min	5600	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	520	J/m	ASTM D 4812
Izod Impact, notched, 23°C	100	J/m	ASTM D 256
Izod Impact, notched, -30°C	90	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	18	J	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	28	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	27	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	9	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m ²	ISO 180/1A
Charpy Impact, notched, 23°C	7	kJ/m ²	ISO 179/2C
THERMAL			
Vicat Softening Temp, Rate B/50	142	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	142	°C	ASTM D 648

1) Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

2) Only typical data for material selection purpose. 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) Own measurement according to UL.

Source, GMD, Last Update:08/17/2006

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	UNIT	STANDARD
THERMAL			
HDT, 1.82 MPa, 3.2mm, unannealed	134	°C	ASTM D 648
CTE, -40°C to 40°C, flow	2.5E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.5E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	3.E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.5E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	142	°C	ISO 306
Vicat Softening Temp, Rate B/120	144	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	133	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.23	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.4 - 0.5	%	SABIC Method
Melt Flow Rate, 280°C/5.0 kgf	3.5	g/10 min	ASTM D 1238
Water Absorption, 23°C/24hrs	0.11	%	ISO 62-1
Moisture Absorption, 50% RH, 24hrs	0.04	%	ISO 62-4
Melt Volume Rate, MVR at 280°C/5.0 kg	3	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	2.04E+16	Ohm-cm	ASTM D 257
Surface Resistivity	1.34E+17	Ohm	ASTM D 257
Dielectric Strength, in oil, 1.6 mm	26.2	kV/mm	ASTM D 149
Relative Permittivity, 1 MHz	2.93	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0034	-	ASTM D 150
Volume Resistivity	2.04E+16	Ohm-cm	IEC 60093
Surface Resistivity, ROA	1.34E+17	Ohm	IEC 60093
Dielectric Strength in oil, 1.5mm	26.2	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Dissipation Factor, 1 MHz	0.0034	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94V-1 Flame Class Rating (3)	1.5	mm	UL 94

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
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	%

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