

## Noryl\* Resin SE1GFN1

### Asia Pacific: COMMERCIAL

10% GR. UL94 V-1 rated. Halogen free flame retardant. Typical applications are TV chassis, deflection yokes and connectors.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	UNIT	STANDARD
<b>MECHANICAL</b>			
Tensile Stress, brk, Type I, 5 mm/min	750	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	5	%	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	1220	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	40700	kgf/cm <sup>2</sup>	ASTM D 790
Hardness, Rockwell L	104	-	ASTM D 785
<b>IMPACT</b>			
Izod Impact, notched, 23°C	9	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -40°C	7	cm-kgf/cm	ASTM D 256
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	147	°C	ASTM D 1525
HDT, 1.82 MPa, 6.4 mm, unannealed	131	°C	ASTM D 648
Relative Temp Index, Elec	110	°C	UL 746B
Relative Temp Index, Mech w/impact	105	°C	UL 746B
Relative Temp Index, Mech w/o impact	110	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.16	-	ASTM D 792
Water Absorption, 24 hours	0.07	%	ASTM D 570
Water Absorption, equilibrium, 23C	0.22	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.3 - 0.5	%	SABIC Method
<b>ELECTRICAL</b>			
Volume Resistivity	1.E+15	Ohm-cm	ASTM D 257
Relative Permittivity, 50/60 Hz	3	-	ASTM D 150
Relative Permittivity, 1 MHz	3	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0017	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0016	-	ASTM D 150

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: 04/14/2003

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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	UNIT	STANDARD
<b>ELECTRICAL</b>			
Hot Wire Ignition {PLC}	1	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	2	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-1 Flame Class Rating (3)	1.47	mm	UL 94
Oxygen Index (LOI)	33.9	%	ASTM D 2863

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
<b>Injection Molding</b>		
Drying Temperature	105 - 110	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	280 - 310	°C
Nozzle Temperature	280 - 310	°C
Front - Zone 3 Temperature	270 - 310	°C
Middle - Zone 2 Temperature	260 - 305	°C
Rear - Zone 1 Temperature	250 - 300	°C
Mold Temperature	75 - 105	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	20 - 100	rpm
Shot to Cylinder Size	30 - 70	%

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