

Noryl® Resin SE1GFN3

Americas: COMMERCIAL

PPE+PS blend. 30% Glass reinforced. Non-brominated, non-chlorinated FR system. UL94 V1 listing. RTI 110/105/110. Dielectric strength. Dimensional stability. Suitable for E/E applications.

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|-----------------------------------------------|---------------|---------------------|--------------|
| MECHANICAL | | | |
| Tensile Stress, brk, Type I, 5 mm/min | 1230 | kgf/cm ² | ASTM D 638 |
| Tensile Strain, brk, Type I, 5 mm/min | 5 | % | ASTM D 638 |
| Flexural Stress, yld, 2.6 mm/min, 100 mm span | 1750 | kgf/cm ² | ASTM D 790 |
| Flexural Modulus, 2.6 mm/min, 100 mm span | 79400 | kgf/cm ² | ASTM D 790 |
| Hardness, Rockwell L | 108 | - | ASTM D 785 |
| IMPACT | | | |
| Izod Impact, notched, 23°C | 11 | cm-kgf/cm | ASTM D 256 |
| Izod Impact, notched, -40°C | 9 | cm-kgf/cm | ASTM D 256 |
| THERMAL | | | |
| HDT, 0.45 MPa, 6.4 mm, unannealed | 140 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 135 | °C | ASTM D 648 |
| CTE, -40°C to 95°C, flow | 2.52E-05 | 1/°C | ASTM E 831 |
| 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 |
| PHYSICAL | | | |
| Specific Gravity | 1.31 | - | ASTM D 792 |
| Water Absorption, 24 hours | 0.06 | % | ASTM D 570 |
| Mold Shrinkage, flow, 3.2 mm (5) | 0.1 - 0.4 | % | SABIC Method |
| ELECTRICAL | | | |
| Dielectric Strength, in oil, 3.2 mm | 20.8 | kV/mm | ASTM D 149 |
| Relative Permittivity, 50/60 Hz | 3.15 | - | ASTM D 150 |
| Dissipation Factor, 50/60 Hz | 0.002 | - | ASTM D 150 |
| Arc Resistance, Tungsten {PLC} | 6 | PLC Code | ASTM D 495 |
| Hot Wire Ignition {PLC} | 0 | PLC Code | UL 746A |

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 this or any other material under actual fire conditions.
4) Own measurement according to UL.
5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

Source, GMD, Last Update:

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| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---------------------------------------------|---------------|----------|-------------|
| ELECTRICAL | | | |
| 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} | 3 | PLC Code | UL 746A |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94V-1 Flame Class Rating (3) | 1.47 | mm | UL 94 |
| UL Recognized, 94V-0 Flame Class Rating (3) | 5.99 | mm | UL 94 |
| Oxygen Index (LOI) | 35.5 | % | ASTM D 2863 |

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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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