

Noryl* Resin GFN1740V

Americas: COMMERCIAL

Noryl* GFN1740V Polyphenylene Oxide (PPO) + Polystyrene (PS) resin is a 40 % Glass Reinforced, injection moldable grade with improved hydrolytic stability and with a Tensile Modulus > 11000 MPa; this grade has been developed for fluid engineering applications where higher static stiffness is required. Noryl* GFN1740V has been certified for potable water applications up to 85C in Europe and North America in limited colours.

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|--|---------------|---------------------|-------------|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 5 mm/min | 1680 | kgf/cm ² | ASTM D 638 |
| Tensile Stress, brk, Type I, 5 mm/min | 1680 | kgf/cm ² | ASTM D 638 |
| Tensile Strain, yld, Type I, 5 mm/min | 1.8 | % | ASTM D 638 |
| Tensile Strain, brk, Type I, 5 mm/min | 1.8 | % | ASTM D 638 |
| Tensile Modulus, 5 mm/min | 140700 | kgf/cm ² | ASTM D 638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 2290 | kgf/cm ² | ASTM D 790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 119300 | kgf/cm ² | ASTM D 790 |
| Tensile Stress, yield, 5 mm/min | 155 | MPa | ISO 527 |
| Tensile Stress, break, 5 mm/min | 155 | MPa | ISO 527 |
| Tensile Strain, yield, 5 mm/min | 1.8 | % | ISO 527 |
| Tensile Strain, break, 5 mm/min | 1.8 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 11300 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 195 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 9500 | MPa | ISO 178 |
| IMPACT | | | |
| Izod Impact, notched, 23°C | 11 | cm-kgf/cm | ASTM D 256 |
| Izod Impact, notched, -30°C | 9 | cm-kgf/cm | ASTM D 256 |
| Instrumented Impact Total Energy, 23°C | 183 | cm-kgf | ASTM D 3763 |
| Izod Impact, unnotched 80*10*4 +23°C | 30 | kJ/m ² | ISO 180/1U |
| Izod Impact, unnotched 80*10*4 -30°C | 30 | kJ/m ² | ISO 180/1U |
| Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm | 30 | kJ/m ² | ISO 179/1eU |
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 151 | °C | ASTM D 1525 |

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 |
|--|---------------|-------------------------|--------------|
| THERMAL | | | |
| HDT, 1.82 MPa, 3.2mm, unannealed | 148 | °C | ASTM D 648 |
| CTE, -40°C to 40°C, flow | 2.E-05 | 1/°C | ASTM E 831 |
| CTE, -40°C to 40°C, xflow | 7.E-05 | 1/°C | ASTM E 831 |
| CTE, -40°C to 40°C, flow | 2.E-05 | 1/°C | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow | 7.E-05 | 1/°C | ISO 11359-2 |
| Vicat Softening Temp, Rate B/50 | 152 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 161 | °C | ISO 306 |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 147 | °C | ISO 75/Af |
| PHYSICAL | | | |
| Specific Gravity | 1.4 | - | ASTM D 792 |
| Mold Shrinkage, flow, 3.2 mm (5) | 0.09 - 0.15 | % | SABIC Method |
| Melt Flow Rate, 300°C/5.0 kgf | 10 | g/10 min | ASTM D 1238 |
| Density | 1.4 | g/cm ³ | ISO 1183 |
| Water Absorption, (23°C/sat) | 0.2 | % | ISO 62 |
| Moisture Absorption (23°C / 50% RH) | 0.06 | % | ISO 62 |
| Melt Volume Rate, MVR at 300°C/10.0 kg | 20 | cm ³ /10 min | ISO 1133 |

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| PROCESSING PARAMETERS | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| Injection Molding | | |
| Drying Temperature | 100 - 120 | °C |
| Drying Time | 2 - 4 | hrs |
| Melt Temperature | 280 - 300 | °C |
| Nozzle Temperature | 280 - 300 | °C |
| Front - Zone 3 Temperature | 290 - 310 | °C |
| Middle - Zone 2 Temperature | 270 - 290 | °C |
| Rear - Zone 1 Temperature | 250 - 270 | °C |
| Hopper Temperature | 60 - 80 | °C |
| Mold Temperature | 80 - 120 | °C |

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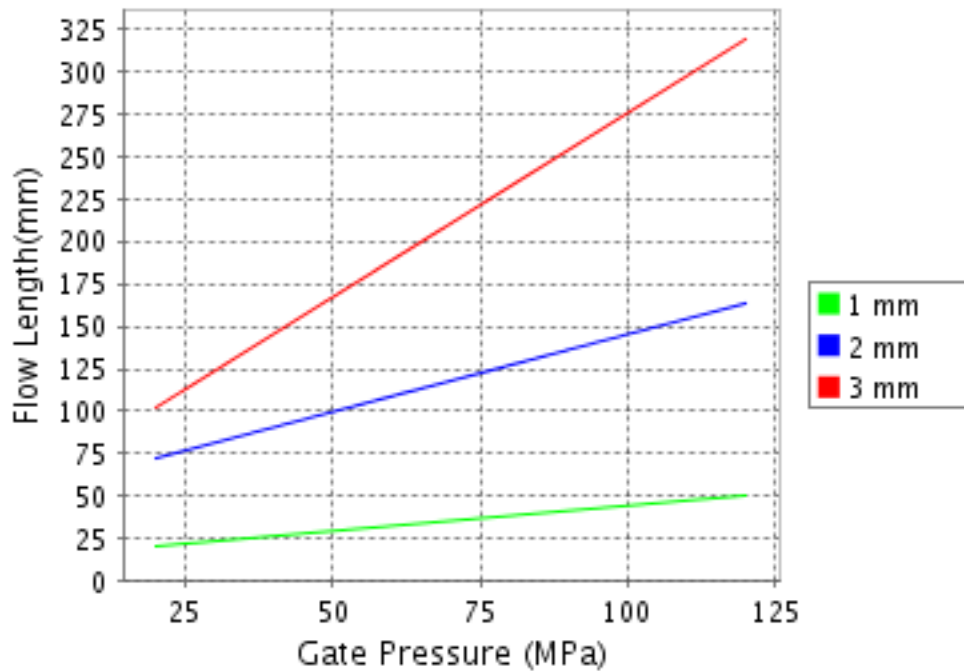
CALCULATED FLOW LENGTH INDICATION

Moldflow® Radial Flow Analysis

Noryl® GFN1740V

Melt Temperature : 290°C

Mold Temperature : 100°C



Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.

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