

Noryl* Resin GFN2

Europe-Africa-Middle East: COMMERCIAL

NORYL GFN2 is a standard 20 % glass fibre reinforced material with a HDT/A of 130C according ISO 75. NORYL GFN2 can be used for all applications where a higher modulus is required. NORYL GFN2 is available in all colours.

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------|-------------------|----------------|
| MECHANICAL | | | |
| Taber Abrasion, CS-17, 1 kg | 60 | mg/1000cy | SABIC Method |
| Tensile Stress, yield, 5 mm/min | 80 | MPa | ISO 527 |
| Tensile Stress, break, 5 mm/min | 80 | MPa | ISO 527 |
| Tensile Strain, yield, 5 mm/min | 2.5 | % | ISO 527 |
| Tensile Strain, break, 5 mm/min | 2.5 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 6000 | MPa | ISO 527 |
| Flexural Stress, break, 2 mm/min | 120 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 4500 | MPa | ISO 178 |
| Hardness, H358/30 | 100 | MPa | ISO 2039-1 |
| IMPACT | | | |
| Izod Impact, unnotched 80*10*4 +23°C | 23 | kJ/m ² | ISO 180/1U |
| Izod Impact, unnotched 80*10*4 -30°C | 23 | kJ/m ² | ISO 180/1U |
| Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm | 25 | kJ/m ² | ISO 179/1eU |
| Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm | 25 | kJ/m ² | ISO 179/1eU |
| THERMAL | | | |
| 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 |
| Vicat Softening Temp, Rate A/50 | 145 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/50 | 135 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 140 | °C | ISO 306 |
| HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm | 130 | °C | ISO 75/Be |

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: 11/29/2006

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| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------|-------------------------|----------------|
| THERMAL | | | |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm | 120 | °C | ISO 75/Ae |
| Relative Temp Index, Elec | 50 | °C | UL 746B |
| Relative Temp Index, Mech w/impact | 50 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact | 50 | °C | UL 746B |
| PHYSICAL | | | |
| Mold Shrinkage on Tensile Bar, flow (2) | 0.2 - 0.4 | % | SABIC Method |
| Density | 1.25 | 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 280°C/10.0 kg | 15 | cm ³ /10 min | ISO 1133 |
| ELECTRICAL | | | |
| Volume Resistivity | 1.E+15 | Ohm-cm | IEC 60093 |
| Surface Resistivity, ROA | >1.E+15 | Ohm | IEC 60093 |
| Dielectric Strength, in oil, 3.2 mm | 18 | kV/mm | IEC 60243-1 |
| Relative Permittivity, 50/60 Hz | 2.9 | - | IEC 60250 |
| Relative Permittivity, 1 MHz | 2.9 | - | IEC 60250 |
| Dissipation Factor, 50/60 Hz | 0 | - | IEC 60250 |
| Dissipation Factor, 1 MHz | 0.003 | - | IEC 60250 |
| Comparative Tracking Index | 250 | V | IEC 60112 |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94HB Flame Class Rating (3) | 1.5 | mm | UL 94 |
| Glow Wire Flammability Index 750°C, passes at | 3.2 | mm | IEC 60695-2-12 |
| Oxygen Index (LOI) | 26 | % | ISO 4589 |

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4) Own measurement according to UL.

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| PROCESSING PARAMETERS | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| Injection Molding | | |
| Drying Temperature | 100 - 120 | °C |
| Drying Time | 2 - 3 | hrs |
| Melt Temperature | 280 - 300 | °C |
| Nozzle Temperature | 260 - 280 | °C |
| Front - Zone 3 Temperature | 280 - 300 | °C |
| Middle - Zone 2 Temperature | 260 - 280 | °C |
| Rear - Zone 1 Temperature | 240 - 260 | °C |
| Hopper Temperature | 60 - 80 | °C |
| Mold Temperature | 80 - 120 | °C |

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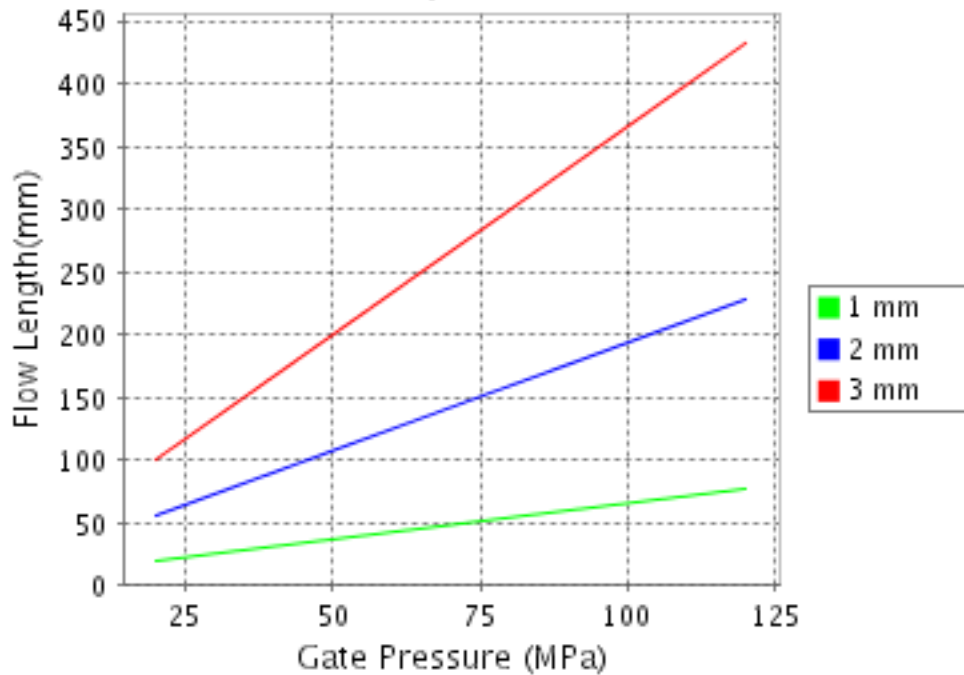
CALCULATED FLOW LENGTH INDICATION

Moldflow® Radial Flow Analysis

Noryl® GFN2

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.

® Moldflow is a registered trademark of the Moldflow Corporation.

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