



Noryl GTX* Resin GTX820
Americas: COMMERCIAL

GR 20%. Higher stiffness of 800000 psi (4000 MPa) flexural modulus. Excellent chemical and high heat resistance. Application: valves.

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------------|-------------------|-------------|
| MECHANICAL | | | |
| Flexural Stress, yld, 2.6 mm/min, 100 mm span | 194 | MPa | ASTM D 790 |
| Flexural Modulus, 2.6 mm/min, 100 mm span | 5960 | MPa | ASTM D 790 |
| Hardness, Rockwell R | 119 | - | ASTM D 785 |
| IMPACT | | | |
| Izod Impact, notched, 23°C | 80 | J/m | ASTM D 256 |
| Izod Impact, notched, -30°C | 53 | J/m | ASTM D 256 |
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 248 | °C | ASTM D 1525 |
| HDT, 0.45 MPa, 6.4 mm, unannealed | 254 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 232 | °C | ASTM D 648 |
| CTE, -20°C to 150°C, flow | 3.06E-05 - 3.96E-05 | 1/°C | ASTM E 831 |
| PHYSICAL | | | |
| Specific Gravity | 1.24 | - | ASTM D 792 |
| Density | 1.245 | g/cm ³ | ASTM D 792 |
| Water Absorption, 24 hours | 0.5 | % | ASTM D 570 |
| Moisture Absorption, 50% RH, 24 hrs | 1 | % | ASTM D 570 |
| Mold Shrinkage, flow, 3.2 mm | 0.4 - 0.6 | % | GE Method |
| Mold Shrinkage, xflow, 3.2 mm | 0.6 - 0.8 | % | GE Method |

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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- Do NOT mix NORYL GTX* resin with other grades of NORYL* resins.

| PROCESSING PARAMETERS | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| Injection Molding | | |
| Drying Temperature | 95 - 105 | °C |
| Drying Time | 3 - 4 | hrs |
| Drying Time (Cumulative) | 8 | hrs |
| Maximum Moisture Content | 0.07 | % |
| Minimum Moisture Content | 0.02 | % |
| Melt Temperature | 280 - 305 | °C |
| Nozzle Temperature | 280 - 305 | °C |
| Front - Zone 3 Temperature | 275 - 305 | °C |
| Middle - Zone 2 Temperature | 270 - 305 | °C |
| Rear - Zone 1 Temperature | 265 - 305 | °C |
| Mold Temperature | 75 - 120 | °C |
| Back Pressure | 0.3 - 1.4 | MPa |
| Screw Speed | 20 - 100 | rpm |
| Shot to Cylinder Size | 30 - 50 | % |
| Vent Depth | 0.013 - 0.038 | mm |

- Polystyrene and acrylic regrind are effective purging Materials. Use temperature range appropriate for particular purging resin.
- Regrind must also be dried. Maximum 25% regrind.
- Dry at recommended temperatures and times for optimum performance. Overdrying can cause loss of physical properties and/or create appearance defects. Do not exceed recommended basic drying time and temperature above or:
 - 4-8 hrs at 95°C (200°F), 10 hrs max
 - 6-12 hrs at 80°C (175°F), 16 hrs max
 - 8-16 hrs at 65°C (150°F), 24 hrs max
- AVOID air circulating tray ovens. Moisture levels in heated ambient air can exceed moisture level in the resin itself, causing moisture ABSORPTION not drying.
- Avoid melt temperature in excess of 300°C (575°F) and residence times over 6-8 minutes (may affect properties and/or appearance).
- Nozzle temperature controls assist in elimination of drool premature freeze-off.
- Shot sizes in excess of 50% barrel capacity can lead to difficulties in providing a consistent, homogenous plastic melt.

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