

NORYL GTX™ RESIN GTX9810

DESCRIPTION

NORYL GTX9810 resin is a conductive, non-reinforced alloy of Polyphenylene Ether (PPE) + Polyamide (PA). This injection moldable grade is optimized to allow for in- or on-line primer-less electrostatic and powder coat painting. NORYL GTX9810 resin exhibits high impact resistance and strength, excellent flow and improved dimension stability from low moisture absorption. This product is targeted for automotive painted applications such as body panels, tank flaps and EV service flaps.

| GENERAL INFORMATION | |
|-----------------------|--|
| Features | Chemical Resistance, Electrically Conductive, Hydrolytic Stability, Low Warpage, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Aesthetics/Visual effects, Dimensional stability, High stiffness/Strength, High temperature resistance, Impact resistant, No PFAS intentionally added |
| Fillers | Conductive agent |
| Polymer Types | Polyphenylene Ether + PA (PPE+Nylon) |
| Processing Techniques | Injection Molding |

| INDUSTRY | SUB INDUSTRY |
|------------|----------------------|
| Automotive | Automotive Exteriors |

TYPICAL PROPERTY VALUES

Revision 20240403

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|----------------|-------------------|--------------|
| MECHANICAL ⁽¹⁾ | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 58 | MPa | ASTM D638 |
| Tensile Stress, brk, Type I, 50 mm/min | 53 | MPa | ASTM D638 |
| Tensile Strain, yld, Type I, 50 mm/min | 5 | % | ASTM D638 |
| Tensile Strain, brk, Type I, 50 mm/min | 69 | % | ASTM D638 |
| Tensile Modulus, 5 mm/min | 2450 | MPa | ASTM D638 |
| Flexural Strength, 1.3 mm/min, 50 mm span | 90 | MPa | ASTM D790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 2380 | MPa | ASTM D790 |
| Tensile Stress, yield, 50 mm/min | 58 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 48 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 5 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 56 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2370 | MPa | ISO 527 |
| Flexural Strength, 2 mm/min | 88 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 2380 | MPa | ISO 178 |
| IMPACT ⁽¹⁾ | | | |
| Izod Impact, notched, 23°C | 174 | J/m | ASTM D256 |
| Izod Impact, notched, -30°C | 58 | J/m | ASTM D256 |
| Izod Impact, unnotched, 23°C | NB | J/m | ASTM D4812 |
| Izod Impact, unnotched, -30°C | NB | J/m | ASTM D4812 |
| Izod Impact, notched 80*10*4 +23°C | 15 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 5 | kJ/m ² | ISO 180/1A |
| Izod Impact, unnotched 80*10*4 +23°C | NB | kJ/m ² | ISO 180/1U |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|--|-------------------|-------------------------|--------------|
| Izod Impact, unnotched 80*10*4 -30°C | NB | kJ/m ² | ISO 180/1U |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 16 | kJ/m ² | ISO 179/1eA |
| Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm | NB | kJ/m ² | ISO 179/1eU |
| THERMAL ⁽¹⁾ | | | |
| HDT, 0.45 MPa, 3.2 mm, unannealed | 201 | °C | ASTM D648 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 95 | °C | ASTM D648 |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 185 | °C | ISO 75/Bf |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 96 | °C | ISO 75/Af |
| CTE, -40°C to 60°C, flow | 7.8E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 60°C, xflow | 7.7E-05 | 1/°C | ASTM E831 |
| CTE, 23°C to 60°C, flow | 7.8E-05 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 60°C, xflow | 7.7E-05 | 1/°C | ISO 11359-2 |
| Vicat Softening Temp, Rate B/50 | 193 | °C | ASTM D1525 |
| Vicat Softening Temp, Rate B/120 | 196 | °C | ASTM D1525 |
| Vicat Softening Temp, Rate B/50 | 193 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 196 | °C | ISO 306 |
| PHYSICAL ⁽¹⁾ | | | |
| Specific Gravity | 1.09 | - | ASTM D792 |
| Density | 1.10 | g/cm ³ | ISO 1183 |
| Melt Flow Rate, 280°C/5.0 kgf | 26 | g/10 min | ASTM D1238 |
| Melt Volume Rate, MVR at 280°C/5.0 kg | 25 | cm ³ /10 min | ISO 1133 |
| Water Absorption, (23°C/24hrs) | 0.42 | % | ISO 62-1 |
| Moisture Absorption, (23°C/50% RH/24hrs) | 0.12 | % | ISO 62-4 |
| Mold Shrinkage, flow ⁽²⁾ | 1.4 – 1.7 | % | SABIC method |
| Mold Shrinkage, xflow ⁽²⁾ | 1.4 – 1.7 | % | SABIC method |
| ELECTRICAL ⁽¹⁾ | | | |
| Volume Resistivity | 5.0E+02 – 1.0E+04 | Ω.cm | SABIC method |
| INJECTION MOLDING ⁽³⁾ | | | |
| Drying Temperature | 100 – 120 | °C | |
| Drying Time | 3 – 4 | Hrs | |
| Maximum Moisture Content | 0.07 | % | |
| Melt Temperature | 290 – 320 | °C | |
| Nozzle Temperature | 280 – 310 | °C | |
| Front - Zone 3 Temperature | 290 – 320 | °C | |
| Middle - Zone 2 Temperature | 280 – 300 | °C | |
| Rear - Zone 1 Temperature | 260 – 280 | °C | |
| Mold Temperature | 100 – 120 | °C | |
| Back Pressure | 0.4 – 1.0 | MPa | |
| Screw Speed | 20 – 100 | rpm | |
| Shot to Cylinder Size | 30 – 50 | % | |

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) 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.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.



ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

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