

Noryl GTX* Resin GTX910

Americas: COMMERCIAL

Unfilled grade for automotive on-line painted components. Dimensional stability. Excellent chemical resistance. Class A surface appearance.

Property

| MECHANICALValueUnitTensile Stress, yld, Type I, 50 mm/min59MPaITensile Stress, brk, Type I, 50 mm/min55MPaITensile Strain, brk, Type I, 50 mm/min60%IFlexural Stress, yld, 2.6 mm/min, 100 mm span95MPaIFlexural Modulus, 2.6 mm/min, 100 mm span2240MPaIHardness, Rockwell R116-IIIIIIILood Impact, notched, 23°C240J/mIIIost Impact Energy @ peak, 23°C50JIIInstrumented Impact Energy @ peak, -3039JIIVicat Softening Temp, Rate B/50232°CIIVicat Softening Temp, Rate B/50232°CIIIIIIVicat Softening Temp, Rate B/509.E-051/°CIII | Standard ASTM D 638 ASTM D 638 ASTM D 638 ASTM D 790 ASTM D 256 ASTM D 3763 ASTM D 4363 ASTM D 1525 ASTM D 648 ASTM D 648 |
|--|---|
| Tensile Stress, brk, Type I, 50 mm/min 55 MPa Tensile Strain, brk, Type I, 50 mm/min 60 % Flexural Stress, yld, 2.6 mm/min, 100 mm span 95 MPa Flexural Modulus, 2.6 mm/min, 100 mm span 95 MPa Hardness, Rockwell R 116 - IMPACT Value Unit Izod Impact, notched, 23°C 240 J/m Izod Impact, notched, -30°C 133 J/m Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C GTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, 40°C to 95°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C <th>ASTM D 638 ASTM D 638 ASTM D 790 ASTM D 785 Standard ASTM D 256 ASTM D 3763 ASTM D 3763 Standard ASTM D 1525 ASTM D 648</th> | ASTM D 638 ASTM D 638 ASTM D 790 ASTM D 785 Standard ASTM D 256 ASTM D 3763 ASTM D 3763 Standard ASTM D 1525 ASTM D 648 |
| Tensile Strain, brk, Type I, 50 mm/min 60 % Flexural Stress, yld, 2.6 mm/min, 100 mm span 95 MPa Flexural Modulus, 2.6 mm/min, 100 mm span 2240 MPa Hardness, Rockwell R 116 - IMPACT Value Unit Izod Impact, notched, 23°C 240 J/m Izod Impact, notched, -30°C 133 J/m Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 50 °C Relative Temp Index, Mech w/impact 50 °C < | ASTM D 638 ASTM D 790 ASTM D 790 ASTM D 785 Standard ASTM D 256 ASTM D 256 ASTM D 3763 ASTM D 3763 Standard ASTM D 1525 ASTM D 1525 ASTM D 648 |
| Flexural Stress, yld, 2.6 mm/min, 100 mm span 95 MPa Flexural Modulus, 2.6 mm/min, 100 mm span 2240 MPa Hardness, Rockwell R 116 - IMPACT Value Unit Izod Impact, notched, 23°C 240 J/m Izod Impact, notched, -30°C 133 J/m Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, 40°C to 95°C, flow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 50 °C Relative Temp Index, Elec 50 °C | ASTM D 790 ASTM D 790 ASTM D 785 Standard ASTM D 256 ASTM D 256 ASTM D 3763 ASTM D 3763 Standard ASTM D 13763 ASTM D 3763 |
| Flexural Modulus, 2.6 mm/min, 100 mm span 2240 MPa Hardness, Rockwell R 116 - IMPACT Value Unit Izod Impact, notched, 23°C 240 J/m Izod Impact, notched, -30°C 133 J/m Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C Relative Temp Index, Mech w/o impact 50 °C PHYSICAL Value Unit Specific | ASTM D 790 ASTM D 785 Standard ASTM D 256 ASTM D 256 ASTM D 3763 ASTM D 3763 Standard ASTM D 1525 ASTM D 648 |
| Hardness, Rockwell R 116 Impact IMPACT Value Unit Izod Impact, notched, 23°C 240 J/m Izod Impact, notched, -30°C 133 J/m Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ | ASTM D 785 Standard ASTM D 256 ASTM D 256 ASTM D 3763 ASTM D 3763 Standard ASTM D 1525 ASTM D 648 |
| IMPACT Value Unit Izod Impact, notched, 23°C 240 J/m Izod Impact, notched, -30°C 133 J/m Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ | Standard ASTM D 256 ASTM D 256 ASTM D 3763 ASTM D 3763 Standard ASTM D 1525 ASTM D 648 |
| Izod Impact, notched, 23°C 240 J/m Izod Impact, notched, -30°C 133 J/m Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, 60°C to 138°C, flow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C Relative Temp Index, Mech w/impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ | ASTM D 256 ASTM D 256 ASTM D 3763 ASTM D 3763 Standard ASTM D 1525 ASTM D 648 |
| Izod Impact, notched, -30°C 133 J/m Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ | ASTM D 256 ASTM D 3763 ASTM D 3763 Standard ASTM D 1525 ASTM D 648 |
| Instrumented Impact Energy @ peak, 23°C 50 J Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ Water Absorption, 50% RH, equilib 1 % | ASTM D 3763 ASTM D 3763 Standard ASTM D 1525 ASTM D 648 |
| Instrumented Impact Energy @ peak, -30 39 J THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C I HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C I HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C I CTE, -40°C to 95°C, flow 9.E-05 1/°C I CTE, -40°C to 95°C, flow 9.E-05 1/°C I CTE, 60°C to 138°C, flow 1.26E-04 1/°C I CTE, 60°C to 138°C, flow 1.26E-04 1/°C I CTE, 60°C to 138°C, flow 1.26E-04 1/°C I Relative Temp Index, Elec 50 °C I Relative Temp Index, Mech w/impact 50 °C I Relative Temp Index, Mech w/o impact 50 °C I PHYSICAL Value Unit I Specific Gravity 1.1 - I Density 1.107 g/cm³ I | ASTM D 3763 Standard ASTM D 1525 ASTM D 648 |
| THERMAL Value Unit Vicat Softening Temp, Rate B/50 232 °C 1 HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C 1 HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C 1 CTE, -40°C to 95°C, flow 9.E-05 1/°C 1 CTE, -40°C to 95°C, xflow 9.E-05 1/°C 1 CTE, 60°C to 138°C, flow 1.26E-04 1/°C 1 CTE, 60°C to 138°C, xflow 1.26E-04 1/°C 1 CTE, 60°C to 138°C, xflow 1.26E-04 1/°C 1 Relative Temp Index, Elec 50 °C 1 Relative Temp Index, Mech w/impact 50 °C 1 PHYSICAL Value Unit 1 - Specific Gravity 1.1 - 1 1 Density 1.107 g/cm³ 1 % | Standard ASTM D 1525 ASTM D 648 |
| Vicat Softening Temp, Rate B/50 232 °C HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, -40°C to 95°C, xflow 9.E-05 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C PHYSICAL Value Unit Specific Gravity 1.107 g/cm³ Water Absorption, 50% RH, equilib 1 % | ASTM D 1525 ASTM D 648 |
| HDT, 0.45 MPa, 6.4 mm, unannealed 193 °C HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, -40°C to 95°C, xflow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C Relative Temp Index, Mech w/o impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ Water Absorption, 50% RH, equilib 1 % | ASTM D 648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed 143 °C CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, -40°C to 95°C, xflow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C Relative Temp Index, Mech w/o impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ Water Absorption, 50% RH, equilib 1 % | |
| CTE, -40°C to 95°C, flow 9.E-05 1/°C CTE, -40°C to 95°C, xflow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C Relative Temp Index, Mech w/o impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ Water Absorption, 50% RH, equilib 1 % | ASTM D 648 |
| CTE, -40°C to 95°C, xflow 9.E-05 1/°C CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C Relative Temp Index, Mech w/o impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ Water Absorption, 50% RH, equilib 1 % | |
| CTE, 60°C to 138°C, flow 1.26E-04 1/°C CTE, 60°C to 138°C, xflow 1.26E-04 1/°C Relative Temp Index, Elec 50 °C Relative Temp Index, Mech w/impact 50 °C Relative Temp Index, Mech w/o impact 50 °C PHYSICAL Value Unit Specific Gravity 1.1 - Density 1.107 g/cm³ Water Absorption, 50% RH, equilib 1 % | ASTM E 831 |
| CTE, 60°C to 138°C, xflow1.26E-041/°C1Relative Temp Index, Elec50°CRelative Temp Index, Mech w/impact50°CRelative Temp Index, Mech w/o impact50°CPHYSICALValueUnitSpecific Gravity1.1-Density1.107g/cm³Water Absorption, 50% RH, equilib1% | ASTM E 831 |
| Relative Temp Index, Elec50°CRelative Temp Index, Mech w/impact50°CRelative Temp Index, Mech w/o impact50°CPHYSICALValueUnitSpecific Gravity1.1-Density1.107g/cm³Water Absorption, 50% RH, equilib1% | ASTM E 831 |
| Relative Temp Index, Mech w/impact50°CRelative Temp Index, Mech w/o impact50°CPHYSICALValueUnitSpecific Gravity1.1-Density1.107g/cm³Water Absorption, 50% RH, equilib1% | ASTM E 831 |
| Relative Temp Index, Mech w/o impact50°CPHYSICALValueUnitSpecific Gravity1.1-Density1.107g/cm³Water Absorption, 50% RH, equilib1% | UL 746B |
| PHYSICALValueUnitSpecific Gravity1.1-Density1.107g/cm³Water Absorption, 50% RH, equilib1% | UL 746B |
| Specific Gravity1.1-Density1.107g/cm³Water Absorption, 50% RH, equilib1% | UL 746B |
| Density1.107g/cm³Water Absorption, 50% RH, equilib1% | Standard |
| Water Absorption, 50% RH, equilib 1 % | ASTM D 792 |
| | ASTM D 792 |
| | ASTM D 570 |
| Moisture Absorption, 50% RH, 24 hrs 0.5 % | ASTM D 570 |
| Mold Shrinkage, flow, 3.2 mm 1.1 - 1.3 % | SABIC Method |
| Mold Shrink, flow, annealed 130C 1hr 1.6 - 1.8 % | ASTM D 955 |
| Mold Shrinkage, xflow, 3.2 mm 1 - 1.2 % | SABIC Method |
| ELECTRICAL Value Unit | Standard |
| Arc Resistance, Tungsten {PLC} 7 PLC Code | ASTM D 495 |
| Hot Wire Ignition (PLC) 3 PLC Code | UL 746A |
| High Voltage Arc Track Rate {PLC} 4 PLC Code | UL 746A |
| High Ampere Arc Ign, surface {PLC} 0 PLC Code | UL 746A |
| Comparative Tracking Index (UL) {PLC} 1 PLC Code | UL 746A |
| FLAME CHARACTERISTICS Value Unit | Standard |
| UL Recognized, 94HB Flame Class Rating (3) 1.49 mm | UL 94 |

Processing

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

| Parameter | | |
|-----------------------------|---------------|------|
| Injection Molding | Value | Unit |
| 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 |

Source GMD, last updated:01/05/2000

• 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 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.

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR (LOCAL SALES OFFICE) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. 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) Internal measurements according to UL standards.

Disclaimer : THE MATERIALS AND PRODUCTS OF THE BUSINESSES MAKING UP THE SABIC INNOVATIVE PLASTICS COMPANY, ITS SUBSIDIARIES AND AFFILIATES ("SABIC IP"), ARE SOLD SUBJECT TO SABIC IP'S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SABIC IP MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (I) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (II) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING SABIC IP MATERIALS, PRODUCTS, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN SABIC IP'S STANDARD CONDITIONS OF SALE, SABIC IP AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS OR PRODUCTS DESCRIBED HEREIN. Each user bears full responsibility for making its own determination as to the suitability of SABIC IP's materials, products, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating SABIC IP materials or products will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of SABIC IP's Standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by SABIC IP. No statement contained herein concerning a possible or suggested use of any material, product or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of SABIC Innovative Plastics Company or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product or design in the infringement of any patent or other intellectual property right.

* Noryl GTX is a trademark of the SABIC Innovative Plastics Company

© 1997-2008 SABIC Innovative Plastics Company.All rights reserved