# NORYL™ RESIN N300X

REGION AMERICAS

## DESCRIPTION

PPE+PS blend. Unfilled. Non-brominated, non-chlorinated FR system. UL94 V0. High heat. Dielectric strength. Dimensional stability. Suitable for E/E applications.

## TYPICAL PROPERTY VALUES

Revision 20180905

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 74 | MPa | ASTM D 638 |
| Tensile Stress, brk, Type I, 50 mm/min | 73 | MPa | ASTM D 638 |
| Tensile Strain, yld, Type I, 50 mm/min | 5.3 | % | ASTM D 638 |
| Tensile Strain, brk, Type I, 50 mm/min | 7.6 | % | ASTM D 638 |
| Tensile Modulus, 5 mm/min | 2380 | MPa | ASTM D 638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 110 | MPa | ASTM D 790 |
| Flexural Stress, yld, 2.6 mm/min, 100 mm span | 110 | MPa | ASTM D 790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 2650 | MPa | ASTM D 790 |
| Flexural Modulus, 2.6 mm/min, 100 mm span | 2500 | MPa | ASTM D 790 |
| Hardness, Rockwell R | 119 | - | ASTM D 785 |
| Tensile Stress, yield | 75 | MPa | ISO 527 |
| Tensile Stress, break | 66 | MPa | ISO 527 |
| Tensile Strain, yield | 5.2 | % | ISO 527 |
| Tensile Strain, break | 13 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2220 | MPa | ISO 527 |
| Flexural Stress | 112 | MPa | ISO 178 |
| Flexural Modulus | 2520 | MPa | ISO 178 |
| IMPACT | | | |
| Izod Impact, notched, 23°C | 190 | J/m | ASTM D 256 |
| Izod Impact, notched, -30°C | 55 | J/m | ASTM D 256 |
| Instrumented Impact Total Energy, 23°C | 54 | J | ASTM D 3763 |
| Izod Impact, notched 80*10*4 +23°C | 15 | kJ/m² | ISO 180/1A |
| THERMAL | | | |
| HDT, 0.45 MPa, 3.2 mm, unannealed | 155 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 140 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 145 | °C | ASTM D 648 |
| CTE, -40°C to 40°C, flow | 8.E-05 | 1/°C | ASTM E 831 |
| CTE, -40°C to 40°C, xflow | 8.E-05 | 1/°C | ASTM E 831 |
| Vicat Softening Temp, Rate B/50 | 162 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 164 | °C | ISO 306 |
| HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm | 156 | °C | ISO 75/Be |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm | 140 | °C | ISO 75/Ae |
| Relative Temp Index, Elec | 105 | °C | UL 746B |
| Relative Temp Index, Mech w/impact | 105 | °C | UL 746B |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| Relative Temp Index, Mech w/o impact | 105 | °C | UL 746B |
| PHYSICAL | | | |
| Specific Gravity | 1.1 | - | ASTM D 792 |
| Water Absorption, equilibrium, 23C | 0.06 | % | ASTM D 570 |
| Mold Shrinkage, flow, 3.2 mm | 0.5 – 0.7 | % | SABIC method |
| Mold Shrinkage on Tensile Bar, xflow | 0.5 – 0.7 | % | SABIC method |
| Melt Flow Rate, 280°C/5.0 kgf | 7.4 | g/10 min | ASTM D 1238 |
| Melt Volume Rate, MVR at 280°C/5.0 kg | 7 | cm³/10 min | ISO 1133 |
| ELECTRICAL | | | |
| Volume Resistivity | 1.E+17 | Ohm-cm | ASTM D 257 |
| Surface Resistivity | 1.E+17 | Ohm | ASTM D 257 |
| Dielectric Strength, in oil, 3.2 mm | 19.4 | kV/mm | ASTM D 149 |
| Relative Permittivity, 50/60 Hz | 2.68 | - | ASTM D 150 |
| Relative Permittivity, 1 MHz | 2.63 | - | ASTM D 150 |
| Dissipation Factor, 50/60 Hz | 0.0031 | - | ASTM D 150 |
| Dissipation Factor, 1 MHz | 0.009 | - | ASTM D 150 |
| Arc Resistance, Tungsten {PLC} | 6 | PLC Code | ASTM D 495 |
| Hot Wire Ignition {PLC} | 0 | PLC Code | UL 746A |
| High Voltage Arc Track Rate {PLC} | 4 | PLC Code | UL 746A |
| High Ampere Arc Ign, surface {PLC} | 4 | PLC Code | UL 746A |
| Comparative Tracking Index (UL) {PLC} | 3 | PLC Code | UL 746A |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94V-0 Flame Class Rating | 1.47 | mm | UL 94 |
| INJECTION MOLDING | | | |
| Drying Temperature | 110 – 120 | °C | |
| Drying Time | 3 – 4 | hrs | |
| Drying Time (Cumulative) | 8 | hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 300 – 325 | °C | |
| Nozzle Temperature | 300 – 325 | °C | |
| Front - Zone 3 Temperature | 290 – 325 | °C | |
| Middle - Zone 2 Temperature | 275 – 320 | °C | |
| Rear - Zone 1 Temperature | 265 – 315 | °C | |
| Mold Temperature | 80 – 110 | °C | |
| Back Pressure | 0.3 – 0.7 | MPa | |
| Screw Speed | 20 – 100 | rpm | |
| Shot to Cylinder Size | 30 – 70 | % | |

## DISCLAIMER