# NORYL™ RESIN NH7010E

REGION ASIA

## DESCRIPTION

NORYL NH7010E resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS) and exhibits an excellent balance of non-brominated, non-chlorinated flame retardance, high heat resistance, good flow, and low specific gravity for light weight parts. This injection moldable grade carries UL94 flame ratings of 5VA at 2mm and V0 at 1.5mm along with a UL746C Outdoor Suitability rating of F1. NORYL NH7010E resin is targeted for applications such as electrical enclosures and solar/PV junction boxes.

| GENERAL INFORMATION | |
|---|---|
| Features | Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Non Cl/Br flame retardant, Dimensional stability, Impact resistant, No PFAS intentionally added |
| Fillers | Unreinforced |
| Polymer Types | Polyphenylene Ether + PS (PPE+PS) |
| Processing Techniques | Injection Molding |

## TYPICAL PROPERTY VALUES

Revision 20250729

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL [1] | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 68 | MPa | ASTM D638 |
| Tensile Stress, brk, Type I, 50 mm/min | 49 | MPa | ASTM D638 |
| Tensile Strain, yld, Type I, 50 mm/min | 5.2 | % | ASTM D638 |
| Tensile Strain, brk, Type I, 50 mm/min | 41 | % | ASTM D638 |
| Tensile Modulus, 5 mm/min | 2250 | MPa | ASTM D638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 102 | MPa | ASTM D790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 2470 | MPa | ASTM D790 |
| Tensile Stress, yield, 50 mm/min | 69 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 63 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 4.9 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 8.4 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2500 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 109 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 2520 | MPa | ISO 178 |
| IMPACT [1] | | | |
| Izod Impact, notched, 23°C | 223 | J/m | ASTM D256 |
| Izod Impact, notched, -30°C | 89 | J/m | ASTM D256 |
| Instrumented Dart Impact Total Energy, 23°C | 38 | J | ASTM D3763 |
| Izod Impact, notched 80*10*4 +23°C | 20 | kJ/m² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 8 | kJ/m² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 21 | kJ/m² | ISO 179/1eA |
| THERMAL [1] | | | |
| Vicat Softening Temp, Rate B/50 | 160 | °C | ASTM D1525 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 139 | °C | ASTM D648 |
| CTE, -40°C to 40°C, flow | 8.16E-05 | 1/°C | ASTM E831 |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| CTE, -40°C to 40°C, xflow | 8.15E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 40°C, flow | 8.16E-05 | 1/°C | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow | 8.15E-05 | 1/°C | ISO 11359-2 |
| Vicat Softening Temp, Rate B/50 | 161 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 162 | °C | ISO 306 |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 139 | °C | ISO 75/Af |
| PHYSICAL (1) | | | |
| Specific Gravity | 1.09 | - | ASTM D792 |
| Mold Shrinkage, flow, 3.2 mm (2) | 0.5 – 0.8 | % | SABIC method |
| Melt Flow Rate, 300°C/5.0 kgf | 10.1 | g/10 min | ASTM D1238 |
| Density | 1.09 | g/cm³ | ISO 1183 |
| Water Absorption, (23°C/saturated) | 0.25 | % | ISO 62-1 |
| Moisture Absorption (23°C / 50% RH) | 0.05 | % | ISO 62 |
| Melt Volume Rate, MVR at 300°C/5.0 kg | 10 | cm³/10 min | ISO 1133 |
| INJECTION MOLDING (3) | | | |
| 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 | % | |

(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.

## MORE INFORMATION

For curve data and CAE cards, please visit and register at https://materialfinder.sabic-specialties.com

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