

NORYL™ RESIN NH7010HF

REGION AMERICAS

DESCRIPTION

Noryl® NH7010HF resin is a modified PPE-PS blend that exhibits an excellent balance of non-halogenated flame retardance, high heat resistance, good flow, and low specific gravity for light weight parts. The resin will be available in custom colors and is suitable for injection molding.

TYPICAL PROPERTY VALUES

Revision 20180906

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|--|----------------|-------------------------|----------------|
| MECHANICAL | | | |
| Tensile Stress, brk, Type I, 50 mm/min | 59 | MPa | ASTM D 638 |
| Tensile Strain, yld, Type I, 50 mm/min | 5 | % | ASTM D 638 |
| Tensile Strain, brk, Type I, 50 mm/min | 12 | % | ASTM D 638 |
| Tensile Modulus, 5 mm/min | 2180 | MPa | ASTM D 638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 100 | MPa | ASTM D 790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 2460 | MPa | ASTM D 790 |
| IMPACT | | | |
| Izod Impact, notched, 23°C | 227 | J/m | ASTM D 256 |
| Izod Impact, notched, -30°C | 69 | J/m | ASTM D 256 |
| Instrumented Impact Total Energy, 23°C | 53 | J | ASTM D 3763 |
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 159 | °C | ASTM D 1525 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 138 | °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 |
| CTE, -40°C to 40°C, flow | 8.E-05 | 1/°C | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow | 8.E-05 | 1/°C | ISO 11359-2 |
| Ball Pressure Test, approximate maximum | 145 | °C | IEC 60695-10-2 |
| 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 |
| Relative Temp Index, Elec | 105 | °C | UL 746B |
| Relative Temp Index, Mech w/impact | 105 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact | 105 | °C | UL 746B |
| PHYSICAL | | | |
| Specific Gravity | 1.09 | - | ASTM D 792 |
| Mold Shrinkage, flow, 3.2 mm | 0.5 – 0.8 | % | SABIC method |
| Melt Flow Rate, 300°C/5.0 kgf | 20.1 | g/10 min | ASTM D 1238 |
| Density | 1.09 | g/cm ³ | ISO 1183 |
| Water Absorption, (23°C/sat) | 0.25 | % | ISO 62 |
| Moisture Absorption (23°C / 50% RH) | 0.05 | % | ISO 62 |
| Melt Volume Rate, MVR at 300°C/5.0 kg | 20 | cm ³ /10 min | ISO 1133 |
| ELECTRICAL | | | |
| Arc Resistance, Tungsten {PLC} | 6 | PLC Code | ASTM D 495 |
| Hot Wire Ignition {PLC} | 0 | PLC Code | UL 746A |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|----------------|----------|-------------------|
| High Voltage Arc Track Rate {PLC} | 4 | PLC Code | UL 746A |
| Comparative Tracking Index (UL) {PLC} | 3 | PLC Code | UL 746A |
| FLAME CHARACTERISTICS | | | |
| UL Compliant, 94V-0 Flame Class Rating | 1.5 | mm | UL 94 by SABIC-IP |
| UL Compliant, 94-5VA Rating | 2 | mm | UL 94 by SABIC-IP |
| Glow Wire Flammability Index 960°C, passes at | 1.5 | mm | IEC 60695-2-12 |
| Glow Wire Ignitability Temperature, 1.0 mm | 825 | °C | IEC 60695-2-13 |
| 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 | % | |

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