

NORYL™ RESIN FNH2160

REGION AMERICAS

DESCRIPTION

Non brominated non chlorinated flame retarded NORYL resin for structural foam applications. 80C HDT. All values at 20% weight reduction.

TYPICAL PROPERTY VALUES

Revision 20181012

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|--|----------------|-------------------------|--------------|
| MECHANICAL | | | |
| Tensile Modulus, 50 mm/min | 2680 | MPa | ASTM D 638 |
| Tensile Stress, yield, 50 mm/min | 55 | MPa | ASTM D 638 |
| Tensile Strain, yield, 50 mm/min | 3.04 | % | ASTM D 638 |
| Tensile Stress, yield, 6.35 mm | 36 | MPa | ASTM D 638 |
| FOAM - MECHANICAL 6.4 mm Wt Reduction | | | |
| Tensile Stress, break, 6.35 mm | 34 | MPa | ASTM D 638 |
| Tensile Strain, break, 6.35 mm | 12 | % | ASTM D 638 |
| Flexural Stress, yield, 6.4 mm | 70 | MPa | ASTM D 790 |
| Flexural Modulus, 6.4 mm | 2250 | MPa | ASTM D 790 |
| IMPACT | | | |
| FOAM - IMPACT 6.4 mm Wt Reduction | | | |
| Izod Impact, unnotched, 23°C, 6.4mm | 362 | J/m | ASTM D 4812 |
| Instrumented Impact Energy @ peak, 23°C | 29 | J | ASTM D 3763 |
| THERMAL | | | |
| FOAM - THERMAL 6.4mm Wt Reduction | | | |
| HDT, 0.45 MPa, 6.4 mm, unannealed | 93 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 82 | °C | ASTM D 648 |
| Relative Temp Index, Elec | 65 | °C | UL 746B |
| Relative Temp Index, Mech w/impact | 65 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact | 65 | °C | UL 746B |
| PHYSICAL | | | |
| FOAM - PHYSICAL 6.4mm Wt Reduction | | | |
| Specific Gravity | 1.12 | - | ASTM D 792 |
| Specific Gravity, foam molded | 0.88 | - | ASTM D 792 |
| Water Absorption, 24 hours | 0.07 | % | ASTM D 570 |
| Mold Shrinkage, flow, 6.4 mm | 0.5 – 0.8 | % | SABIC method |
| Melt Volume Rate, MVR at 280°C/5.0 kg | 36 | cm ³ /10 min | ISO 1133 |
| FLAME CHARACTERISTICS | | | |
| FOAM - Flame Class Minimum Density | | | |
| UL Recognized, 94V-1 Flame Class Rating | 3 | mm | UL 94 |
| UL Recognized, 94V-0 Flame Class Rating | 6 | mm | UL 94 |
| UL Recognized, 94-5VA Rating | 3.9 | mm | UL 94 |
| STRUCTURAL FOAM MOLDING | | | |
| Blowing Agent, Physical System | Nitrogen Gas | - | |

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|---|----------------|-------|--------------|
| Concentration Range (Blowing Agent) | 1 – 3 | % | |
| Recommended Concentration (Blowing Agent) | 2 | % | |
| Drying Temperature (Resin) | 70 – 80 | °C | |
| Drying Time (Resin) | 2 – 4 | hrs | |
| Drying Time (Resin, Cumulative) | 8 | hrs | |
| Melt Temperature | 270 – 310 | °C | |
| Nozzle Temperature | 270 – 305 | °C | |
| Front Temperature | 270 – 305 | °C | |
| Middle Temperature | 270 – 305 | °C | |
| Rear Temperature | 230 – 260 | °C | |
| Mold Temperature | 25 – 55 | °C | |

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