

NORYL™ RESIN 731F

REGION ASIA

DESCRIPTION

PPE+PS blend. Unfilled. NSF listed for potable water use in several colors (Standard 61). FDA compliant in several colors (restrictions apply). UL94 HB rated. Low water absorption. Hydrolytic stability. Dimensional stability. Suitable for fluid engineering applications: valve components, water pump housings, etc. This grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HN731A.

TYPICAL PROPERTY VALUES

Revision 20180905

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|--|----------------|-------------------|--------------|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 54 | MPa | ASTM D 638 |
| Tensile Stress, brk, Type I, 50 mm/min | 45 | MPa | ASTM D 638 |
| Tensile Strain, yld, Type I, 50 mm/min | 4 | % | ASTM D 638 |
| Tensile Strain, brk, Type I, 50 mm/min | 30 | % | ASTM D 638 |
| Tensile Modulus, 5 mm/min | 2400 | MPa | ASTM D 638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 75 | MPa | ASTM D 790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 2100 | MPa | ASTM D 790 |
| Tensile Stress, yield, 50 mm/min | 40 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 40 | MPa | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 70 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 70 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2100 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 80 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 2300 | MPa | ISO 178 |
| IMPACT | | | |
| Izod Impact, unnotched, 23°C | 800 | J/m | ASTM D 4812 |
| Izod Impact, notched, 23°C | 150 | J/m | ASTM D 256 |
| Izod Impact, notched, -30°C | 120 | J/m | ASTM D 256 |
| Instrumented Impact Total Energy, 23°C | 55 | J | ASTM D 3763 |
| Izod Impact, unnotched 80*10*4 +23°C | 60 | kJ/m ² | ISO 180/1U |
| Izod Impact, unnotched 80*10*4 -30°C | 55 | kJ/m ² | ISO 180/1U |
| Izod Impact, notched 80*10*4 +23°C | 16 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 11 | kJ/m ² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 13 | kJ/m ² | ISO 179/1eA |
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 133 | °C | ASTM D 1525 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 110 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 124 | °C | ASTM D 648 |
| CTE, -40°C to 40°C, flow | 7.2E-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 | 7.3E-05 | 1/°C | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow | 8.3E-05 | 1/°C | ISO 11359-2 |
| Vicat Softening Temp, Rate B/50 | 133 | °C | ISO 306 |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|----------------|-------------------------|--------------|
| Vicat Softening Temp, Rate B/120 | 135 | °C | ISO 306 |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 112 | °C | ISO 75/Af |
| PHYSICAL | | | |
| Specific Gravity | 1.08 | - | ASTM D 792 |
| Mold Shrinkage, flow, 3.2 mm | 0.5 – 0.8 | % | SABIC method |
| Melt Flow Rate, 280°C/5.0 kgf | 11 | g/10 min | ASTM D 1238 |
| Water Absorption, 23°C/24hrs | 0.13 | % | ISO 62-1 |
| Moisture Absorption, 50% RH, 24hrs, Equilibrium | 0.04 | % | ISO 62-4 |
| Melt Volume Rate, MVR at 280°C/5.0 kg | 12 | cm ³ /10 min | ISO 1133 |
| INJECTION MOLDING | | | |
| Drying Temperature | 105 – 110 | °C | |
| Drying Time | 3 – 4 | hrs | |
| Drying Time (Cumulative) | 8 | hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 280 – 310 | °C | |
| Nozzle Temperature | 280 – 310 | °C | |
| Front - Zone 3 Temperature | 270 – 310 | °C | |
| Middle - Zone 2 Temperature | 260 – 305 | °C | |
| Rear - Zone 1 Temperature | 250 – 300 | °C | |
| Mold Temperature | 75 – 105 | °C | |
| Back Pressure | 0.3 – 0.7 | MPa | |
| Screw Speed | 20 – 100 | rpm | |
| Shot to Cylinder Size | 30 – 70 | % | |

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