# NORYL™ Resin FE1740PW

REGION ASIA

## DESCRIPTION

NORYL FE1740PW resin is a 40% glass fiber reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). ). This injection moldable material is FC EU, FDA food contact compliant*, NSF/ANSI 61, ACS, WRAS and KTW-WBGL listing** for global potable water use for specific colors is available. NORYL FE1740PW resin exhibits excellent long term hydrolytic stability, very low moisture absorption, heat / hot water resistance and is an excellent candidate for a variety of water management applications such as pump housings, impellers, shower/faucet, membrane housings and valves. **

* Restrictions may apply in the case of applications involving fatty foods. Please review the food contact declaration for details.
** Potable water listing is color dependent.

| GENERAL INFORMATION | |
|---|---|
| **Features** | Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Corrosivity, Low Moisture Absorption, Low Specific Gravity, Food contact, Potable water safe, Dimensional stability, High stiffness/Strength, No PFAS intentionally added |
| **Fillers** | Glass Fiber (Total fluorine >50ppm only from inorganic fluorine) |
| **Polymer Types** | Polyphenylene Ether + PS (PPE+PS) |
| **Processing Techniques** | Injection Molding |

| INDUSTRY | SUB INDUSTRY |
|---|---|
| Building and Construction | Water Management |
| Hygiene and Healthcare | Personal and Professional Hygiene |

## TYPICAL PROPERTY VALUES

Revision 20241015

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL [1] | | | |
| **Tensile Stress, brk, Type I, 5 mm/min** | 165 | MPa | ASTM D638 |
| **Tensile Strain, brk, Type I, 5 mm/min** | 1.8 | % | ASTM D638 |
| **Tensile Modulus, 5 mm/min** | 13800 | MPa | ASTM D638 |
| **Flexural Stress, brk, 1.3 mm/min, 50 mm span** | 225 | MPa | ASTM D790 |
| **Flexural Modulus, 1.3 mm/min, 50 mm span** | 11700 | MPa | ASTM D790 |
| **Tensile Stress, break, 5 mm/min** | 155 | MPa | ISO 527 |
| **Tensile Strain, break, 5 mm/min** | 1.8 | % | ISO 527 |
| **Tensile Modulus, 1 mm/min** | 11300 | MPa | ISO 527 |
| **Flexural Stress, break, 2 mm/min** | 195 | MPa | ISO 178 |
| **Flexural Modulus, 2 mm/min** | 9500 | MPa | ISO 178 |
| IMPACT [1] | | | |
| **Izod Impact, notched, 23°C** | 108 | J/m | ASTM D256 |
| **Izod Impact, notched, -30°C** | 90 | J/m | ASTM D256 |
| **Instrumented Dart Impact Total Energy, 23°C** | 18 | J | ASTM D3763 |
| **Izod Impact, unnotched 80*10*4 +23°C** | 30 | kJ/m² | ISO 180/1U |
| **Izod Impact, unnotched 80*10*4 -30°C** | 30 | kJ/m² | ISO 180/1U |
| **Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm** | 30 | kJ/m² | ISO 179/1eU |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| **THERMAL** [1] | | | |
| Vicat Softening Temp, Rate B/50 | 151 | °C | ASTM D1525 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 148 | °C | ASTM D648 |
| CTE, -40°C to 40°C, flow | 2.E-05 | 1/°C | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow | 7.E-05 | 1/°C | ISO 11359-2 |
| Vicat Softening Temp, Rate B/50 | 152 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 161 | °C | ISO 306 |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 147 | °C | ISO 75/Af |
| **PHYSICAL** [1] | | | |
| Specific Gravity | 1.4 | - | ASTM D792 |
| Mold Shrinkage, flow, 3.2 mm [2] | 0.09 – 0.15 | % | SABIC method |
| Melt Flow Rate, 300°C/5.0 kgf | 10 | g/10 min | ASTM D1238 |
| Density | 1.4 | g/cm³ | ISO 1183 |
| Water Absorption, (23°C/saturated) | 0.2 | % | ISO 62-1 |
| Moisture Absorption (23°C / 50% RH) | 0.06 | % | ISO 62 |
| Melt Volume Rate, MVR at 300°C/10.0 kg | 20 | cm³/10 min | ISO 1133 |
| **INJECTION MOLDING** [3] | | | |
| Drying Temperature | 100 – 120 | °C | |
| Drying Time | 2 – 4 | Hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 280 – 300 | °C | |
| Nozzle Temperature | 280 – 300 | °C | |
| Front - Zone 3 Temperature | 290 – 310 | °C | |
| Middle - Zone 2 Temperature | 270 – 290 | °C | |
| Rear - Zone 1 Temperature | 250 – 270 | °C | |
| Hopper Temperature | 60 – 80 | °C | |
| Mold Temperature | 80 – 120 | °C | |

(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.

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