

DuPont™ Rynite® FR530 NC010

THERMOPLASTIC POLYESTER RESIN

Product Information

Common features of Rynite® thermoplastic polyester include mechanical and physical properties such as excellent balance of strength and stiffness, dimensional stability, creep resistance, heat resistance, high surface gloss and good inherent electrical properties at elevated temperature. It can be processed over a broad temperature range and has excellent flow properties.

Rynite® thermoplastic polyester resins are typically used in demanding applications in the automotive, electrical and electronics, appliances where they successfully replace metals and thermosets, as well as other thermoplastic polymers.

Rynite® FR530 NC010 is a 30% glass reinforced, flame retardant, modified polyethylene terephthalate resin.

| General information | Value | Unit | Test Standard |
|---|----------------|------------------------|-----------------|
| Resin Identification | PET-GF30FR(17) | - | ISO 1043 |
| Part Marking Code | PET-GF30FR(17) | - | ISO 11469 |
| Rheological properties | Value | Unit | Test Standard |
| Melt volume-flow rate | 6 | cm ³ /10min | ISO 1133 |
| Temperature | 280 | °C | ISO 1133 |
| Load | 2.16 | kg | ISO 1133 |
| Molding shrinkage, parallel | 0.2 | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 0.8 | % | ISO 294-4, 2577 |
| Mechanical properties | Value | Unit | Test Standard |
| Tensile Modulus | 11500 | MPa | ISO 527-1/-2 |
| Stress at break | 135 | MPa | ISO 527-1/-2 |
| Strain at break | 2 | % | ISO 527-1/-2 |
| Flexural Modulus | 10500 | MPa | ISO 178 |
| Tensile creep modulus | | | ISO 899-1 |
| 1h | 11200 | MPa | |
| 1000h | 9700 | MPa | |
| Charpy impact strength | | | ISO 179/1eU |
| 73°F | 40 | kJ/m ² | |
| -22°F | 40 | kJ/m ² | |
| Charpy notched impact strength | | | ISO 179/1eA |
| 73°F | 10 | kJ/m ² | |
| -22°F | 9 | kJ/m ² | |
| Thermal properties | Value | Unit | Test Standard |
| Melting temperature, 18°F/min | 252 | °C | ISO 11357-1/-3 |
| Temp. of deflection under load | | | ISO 75-1/-2 |
| 260 psi | 225 | °C | |
| 65 psi | 243 | °C | |
| Vicat softening temperature, 90°F/h, 11 lbf | 220 | °C | ISO 306 |
| Ball pressure test | 235 | °C | IEC 60309 |
| Coeff. of linear therm. expansion, parallel | 19 | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion | | | ISO 11359-1/-2 |
| normal | 92 | E-6/K | |
| Normal, -40-23°C | 68 | E-6/K | |
| Parallel, -40-23°C | 22 | E-6/K | |
| Thermal conductivity of melt | 0.24 | W/(m K) | - |
| Spec. heat capacity of melt | 1720 | J/(kg K) | - |
| Eff. thermal diffusivity | 1.1E-7 | m ² /s | - |
| RTI, electrical | | | UL 746B |
| 15mil | 155 | °C | |
| 30mil | 155 | °C | |
| 60mil | 155 | °C | |
| 120mil | 155 | °C | |

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

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| | | | |
|--------------------------------------|----------------------|-------------------|----------------------|
| RTI, impact | | | UL 746B |
| 15mil | 155 | °C | |
| 30mil | 155 | °C | |
| 60mil | 155 | °C | |
| 120mil | 155 | °C | |
| RTI, strength | | | UL 746B |
| 15mil | 155 | °C | |
| 30mil | 155 | °C | |
| 60mil | 155 | °C | |
| 120mil | 155 | °C | |
| Flammability | Value | Unit | Test Standard |
| Burning Behav. at 60mil nom. thickn. | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 1.5 | mm | IEC 60695-11-10 |
| UL recognition | yes | - | UL 94 |
| Burning Behav. at thickness h | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 0.35 | mm | IEC 60695-11-10 |
| UL recognition | yes | - | UL 94 |
| Burning Behav. 5V at thickness h | 5VA | class | IEC 60695-11-20 |
| Thickness tested | 1.5 | mm | IEC 60695-11-20 |
| UL recognition | yes | - | UL 94 |
| Oxygen index | 33 | % | ISO 4589-1/-2 |
| Glow Wire Flammability Index | | | IEC 60695-2-1/2 |
| 30mil | 960 | °C | |
| 40mil | 960 | °C | |
| 80mil | 960 | °C | |
| 120mil | 960 | °C | |
| Glow Wire Ignition Temperature | | | IEC 60695-2-1/3 |
| 30mil | 800 | °C | |
| 40mil | 800 | °C | |
| 60mil | 800 | °C | |
| 80mil | 850 | °C | |
| 120mil | 925 | °C | |
| FMVSS Class | DNI | - | ISO 3795 (FMVSS 302) |
| Electrical properties | Value | Unit | Test Standard |
| Relative permittivity | | | IEC 60250 |
| 100Hz | 4.8 | - | |
| 1MHz | 4.3 | - | |
| Dissipation factor | | | IEC 60250 |
| 100Hz | 70 | E-4 | |
| 1MHz | 126 | E-4 | |
| Volume resistivity | >1E13 | Ohm*m | IEC 60093 |
| Surface resistivity | 1E14 | Ohm | IEC 60093 |
| Electric strength | 39 | kV/mm | IEC 60243-1 |
| Comparative tracking index | | | |
| Comparative tracking index | 200 | - | IEC 60112 |
| CTI, 23°C | 2 | PLC | UL 746A |
| Other properties | Value | Unit | Test Standard |
| Humidity absorption, 80mil | 0.15 | % | Sim. to ISO 62 |
| Water absorption, 80mil | 0.75 | % | Sim. to ISO 62 |
| Density | 1680 | kg/m ³ | ISO 1183 |
| Injection | Value | Unit | Test Standard |
| Drying Recommended | yes | - | - |
| Drying Temperature | 120 | °C | - |
| Drying Time, Dehumidified Dryer | 4 - 6 | h | - |
| Processing Moisture Content | ≤0.02 ^[1] | % | - |
| Melt Temperature Optimum | 280 | °C | - |

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| | | |
|-----------------------------|-----------------------|---|
| Min. melt temperature | 270 °C | - |
| Max. melt temperature | 290 °C | - |
| Max. screw tangential speed | 0.2 m/s | - |
| Mold Temperature Optimum | 110 °C | - |
| Min. mold temperature | 100 °C | - |
| Max. mold temperature | 120 ^[2] °C | - |
| Hold pressure range | ≥80 MPa | - |
| Hold pressure time | 4 s/mm | - |
| Back pressure | As low as possible | - |
| Ejection temperature | 170 °C | - |

1: At levels above 0.02%, strength and toughness will decrease, even though parts may not exhibit surface defects. 2: (6mm - 1mm thickness)

Characteristics

| | | | |
|-----------------------|-----------------------------|---|--------------------------------|
| Processing | • Injection Molding | | |
| Delivery form | • Pellets | | |
| Additives | • Release agent | | |
| Regional Availability | • North America • Europe | • Asia Pacific • South and Central America | • Near East/Africa • Global |

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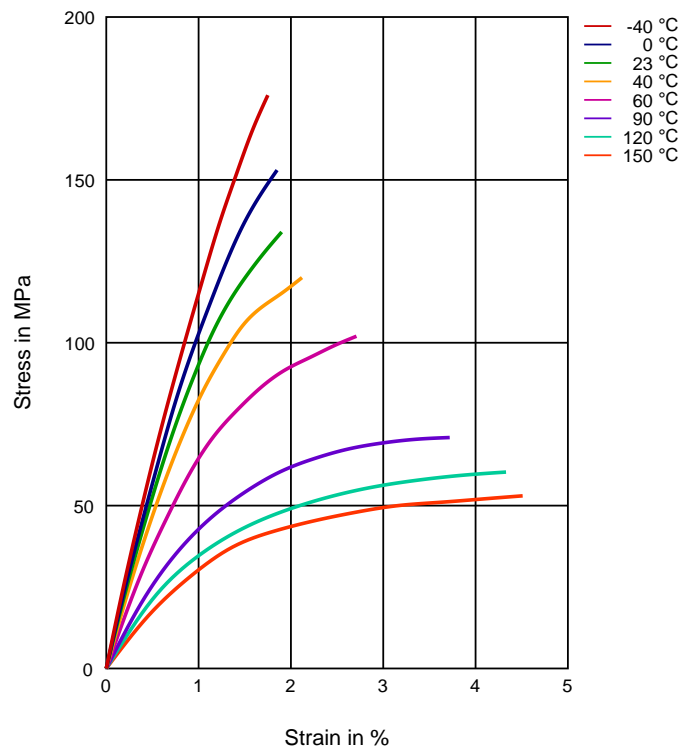


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THERMOPLASTIC POLYESTER RESIN

Diagrams

Stress-strain



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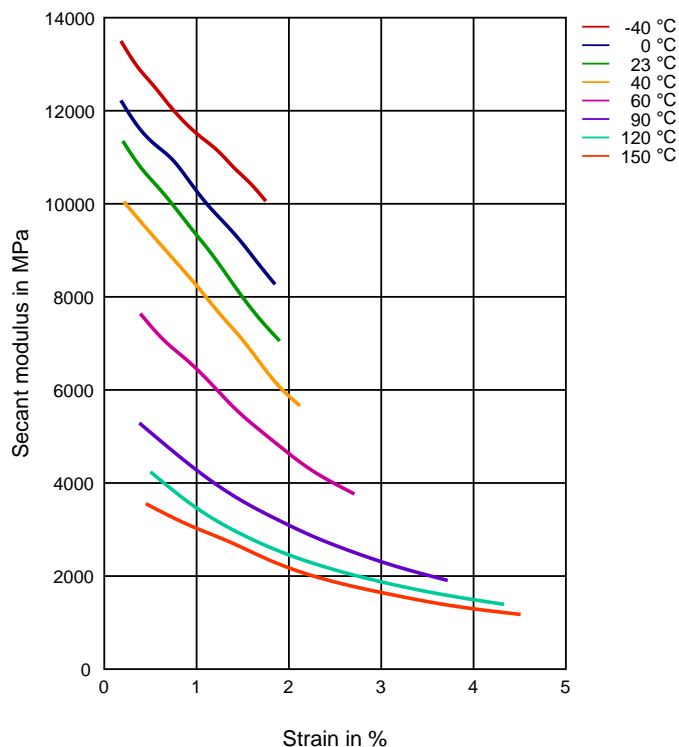
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Secant modulus-strain



Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 160 mil (Hytrel® measured at 80 mil), IEC Electrical properties measured at 80 mil, all ASTM properties measured at 120 mil, and test temperatures are 73 °F unless otherwise stated.

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