



# Rynite<sup>®</sup> PET

thermoplastic polyester resin

## Rynite<sup>®</sup> 530 NC010

Rynite<sup>®</sup> 530 NC010 is a 30% glass reinforced modified polyethylene terephthalate with outstanding balance of strength, stiffness, and toughness, excellent electrical properties, surface appearance, and chemical resistance.

| Property            | Test Method | Units      | Value        |
|---------------------|-------------|------------|--------------|
| <b>Mechanical</b>   |             |            |              |
| Tensile Strength    | ASTM D 638  | MPa (kpsi) |              |
| -40C (-40F)         |             |            | 214 (31.0)   |
| 23C (73F)           |             |            | 159 (23.0)   |
| 90C (194F)          |             |            | 83.4 (12.1)  |
| 150C (300F)         |             |            | 8.2 (8.19)   |
| Elongation at Break | ASTM D 638  | %          |              |
| -40C (-40F)         |             |            | 2.5          |
| 23C (73F)           |             |            | 2.7          |
| 90C (194F)          |             |            | 5.7          |
| 150C (300F)         |             |            | 6.5          |
| Tensile Modulus     | ASTM D 638  | MPa (kpsi) |              |
| -40C (-40F)         |             |            | 11300 (1640) |
| 23C (73F)           |             |            | 10700 (1550) |
| 90C (194F)          |             |            | 4540 (658)   |
| 150C (300F)         |             |            | 3090 (448)   |
| Shear Strength      | ASTM D 732  | MPa (kpsi) | 79.0 (11.5)  |
| Poisson's Ratio     |             |            | 0.41         |
| Flexural Modulus    | ASTM D 790  | MPa (kpsi) |              |
| -40C (-40F)         |             |            | 10300 (1500) |
| 23C (73F)           |             |            | 8960 (1300)  |
| 90C (194F)          |             |            | 3580 (520)   |
| 150C (300F)         |             |            | 2690 (390)   |

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.

Mechanical properties measured at 23°C (73°F) unless otherwise stated.

Shrinkage generated per ISO 294-4 based on 60 X 60mm end-gated plaques or ASTM D 955 based on 76 X 127mm (3 X 5in) end-gated plaques.

Rynite<sup>®</sup> is a DuPont registered trademark.

991001/991020

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|--------------------------------|-------------|------------------------------------|-------------|
| <b>Mechanical</b>              |             |                                    |             |
| Flexural Strength              | ASTM D 790  | MPa (kpsi)                         |             |
| -40C (-40F)                    |             |                                    | 269 (39.0)  |
| 23C (73F)                      |             |                                    | 235 (34.0)  |
| 90C (194F)                     |             |                                    | 114 (16.5)  |
| 150C (300F)                    |             |                                    | 75.8 (11.0) |
| Compressive Strength           | ASTM D 695  | MPa (kpsi)                         | 227 (33.0)  |
| Deformation Under Load         | ASTM D 621  | %                                  |             |
| 23C (73F), 27.6MPa (4000psi)   |             |                                    | 0.4         |
| 50C (122F), 27.6MPa (4000psi)  |             |                                    | 1.6         |
| Flexural Fatigue               | ASTM D 671  | MPa (kpsi)                         |             |
| Cycles 10E6                    |             |                                    | 40.7 (5.9)  |
| Flexural Creep Strain          | ASTM D 2990 | %                                  |             |
| 23C (73F), 27.6MPa (4000psi)   |             |                                    | 0.56        |
| 60C (140F), 27.6MPa (4000psi)  |             |                                    | 1.18        |
| 125C (257F), 27.6MPa (4000psi) |             |                                    | 1.65        |
| Izod Impact                    | ASTM D 256  | J/m (ft lb/in)                     |             |
| -40C (-40F)                    |             |                                    | 96 (1.8)    |
| 23C (73F)                      |             |                                    | 101 (1.9)   |
| Unnotched Impact               | ASTM D 4812 | J/m (ft lb/in)                     |             |
| -40C (-40F)                    |             |                                    | 750 (14.0)  |
| 23C (73F)                      |             |                                    | 960 (18.0)  |
| <b>Thermal</b>                 |             |                                    |             |
| Heat Deflection Temperature    | ASTM D 648  | °C (°F)                            |             |
| 0.45MPa (66psi)                |             |                                    | 247 (477)   |
| 1.8MPa (264psi)                |             |                                    | 224 (435)   |
| CLTE, Parallel                 | ASTM E 831  | E-4/C (E-4/F)                      |             |
| -40 - 23C (-40 - 73F)          |             |                                    | 0.22 (0.12) |
| 23 - 55C (73 - 130F)           |             |                                    | 0.10 (0.06) |
| 55 - 160C (130 - 320F)         |             |                                    | 0.04 (0.02) |
| CLTE, Normal                   | ASTM E 831  | E-4/C (E-4/F)                      |             |
| -40 - 23C (-40 - 73F)          |             |                                    | 0.67 (0.37) |
| 23 - 55C (73 - 130F)           |             |                                    | 0.81 (0.45) |
| 55 - 160C (130 - 320F)         |             |                                    | 1.07 (0.59) |
| Melting Point                  | ASTM D 3418 | °C (°F)                            | 254 (489)   |
| Thermal Conductivity           | ASTM C 177  | W/m K (Btu in/h ft <sup>2</sup> F) | 0.29 (2.0)  |

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| Property   | Test Method | Units         | Value      |
|--|-------------|---------------|------------|
| <b>Electrical</b>                                    |             |               |            |
| Surface Resistivity                                  | ASTM D 257  | ohm           | 1 E14      |
| Volume Resistivity                                   | ASTM D 257  | ohm cm        | 1 E15      |
| Dielectric Strength, Short Time                      | ASTM D 149  | kV/mm (V/mil) |            |
| 23C (73F), 500 V/s, in oil, 1.6mm (0.062in)          |             |               | 25.5 (650) |
| 23C (73F), 500 V/s, in oil, 3.2mm (0.126in)          |             |               | 20.5 (520) |
| 95C (200F), 500 V/s, in oil, 1.6mm (0.062in)         |             |               | 22.5 (570) |
| 95C (200F), 500 V/s, in oil, 3.2mm (0.126in)         |             |               | 16.5 (420) |
| 150C (300F), 500 V/s, in oil, 1.6mm (0.062in)        |             |               | 15.5 (395) |
| 150C (300F), 500 V/s, in oil, 3.2mm (0.126in)        |             |               | 12.0 (300) |
| Dielectric Strength, Step by Step<br>3.2mm (0.126in) | ASTM D 149  | kV/mm (V/mil) | 17.5 (445) |
| Dielectric Constant                                  | ASTM D 150  |               |            |
| 1E3 Hz   |             |               | 3.6        |
| 1E6 Hz   |             |               | 3.5        |
| Dissipation Factor                                   | ASTM D 150  |               |            |
| 1E3 Hz   |             |               | 0.005      |
| 1E6 Hz   |             |               | 0.012      |
| Arc Resistance                                       | ASTM D 495  | s             | 120-180    |
| CTI  | UL 746A     | V             | 250-400    |
| <b>Flammability</b>                                  |             |               |            |
| Rating @ Thickness                                   | UL94        |               | HB         |
| Thickness Tested                                     | UL94        | mm            | 0.75       |
| Limited Oxygen Index                                 | ASTM D 2863 | %             | 20         |
| High Amperage Arc Ignition Resistance                | UL 746A     | arcs          | 60-120     |
| High Voltage Arc Tracking Rate                       |             | mm/min        | 25-80      |
| Hot Wire Ignition                                    | UL 746A     | s             | >120       |
| <b>Temperature Index</b>                             |             |               |            |
| RTI, Electrical<br>0.81mm                            | UL 746B     | °C            | 140        |
| RTI, Mechanical with Impact<br>0.81mm                | UL 746B     | °C            | 140        |
| RTI, Mechanical without Impact<br>0.81mm             | UL 746B     | °C            | 140        |

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|---------------------------------|-------------|---------|-------------------|
| <b>Other</b>                    |             |         |                   |
| Specific Gravity                | ASTM D 792  |         | 1.56              |
| Hardness, Rockwell              | ASTM D 785  |         |                   |
| Scale M                         |             |         | 95                |
| Scale R                         |             |         | 120               |
| Coefficient of Friction         | ASTM D 1894 |         |                   |
| Self, static                    |             |         | 0.18              |
| Steel, static                   |             |         | 0.17              |
| Taber Abrasion                  |             | mg      |                   |
| CS-17 Wheel, 1kg, 1000 cycles   |             |         | 30                |
| Water Absorption                | ASTM D 570  | %       |                   |
| 50%RH,23C,24h                   |             |         | 0.05              |
| Mold Shrinkage                  |             | %       |                   |
| Flow, 1.57mm (0.062in)          |             |         | 0.18              |
| Flow, 3.2mm (0.126in)           |             |         | 0.25              |
| Transverse, 1.57mm (0.062in)    |             |         | 0.78              |
| Transverse, 3.2mm (0.126in)     |             |         | 0.80              |
| <b>Processing</b>               |             |         |                   |
| Melt Temperature Range          |             | °C (°F) | 280-300 (535-570) |
| Mold Temperature Range          |             | °C (°F) | >95 (>205)        |
| Drying Time, Dehumidified Dryer |             | h       | 4                 |
| Drying Temperature              |             | °C (°F) | 120 (250)         |
| Processing Moisture Content     |             | %       | <0.02             |

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