Formerra
*Formerly Avient Distribution*

# Rynite® 530 NC010

## Celanese Corporation - THERMOPLASTIC POLYESTER RESIN

Thursday, December 21, 2023

### General Information

**Product Description**

30% Glass Reinforced Polyethylene Terephthalate

**General**

| | | | |
|---|---|---|---|
| Material Status | • Commercial: Active | | |
| Regional Availability | • Africa & Middle East<br>• Asia Pacific | • Europe<br>• Latin America | • North America |
| Filler / Reinforcement | • Glass Fiber, 30% Filler by Weight | | |
| Additive | • Mold Release | | |
| RoHS Compliance | • Contact Manufacturer | | |
| Automotive Specifications | • ASTM D5927 TPES021 G30 | • FORD WSK-M4D726-A1 Color: Natural | • GM GMP.PET.002 |
| Part Marking Code (ISO 11469) | • >PET-GF30< | | |
| Resin ID (ISO 1043) | • PET-GF30 | | |

### ASTM & ISO Properties [1]

| Physical | Typical Value (English) | | Typical Value (SI) | | Test Method |
|---|---|---|---|---|---|
| Density | 1.56 | g/cm³ | 1.56 | g/cm³ | ISO 1183 |
| Molding Shrinkage | | | | | ISO 294-4 |
| Across Flow | 0.80 | % | 0.80 | % | |
| Across Flow : 176°F (80°C), 48 hr | 0.45 | % | 0.45 | % | |
| Flow | 0.20 | % | 0.20 | % | |
| Flow : 176°F (80°C), 48 hr | 0.10 | % | 0.10 | % | |
| Water Absorption | | | | | ISO 62 |
| 24 hr, 73°F (23°C) | 0.050 | % | 0.050 | % | |
| Saturation, 73°F (23°C), 0.0787 in (2.00 mm) | 0.70 | % | 0.70 | % | |
| Equilibrium, 73°F (23°C), 0.0787 in (2.00 mm), 50% RH | 0.20 | % | 0.20 | % | |
| Viscosity Number (Reduced Viscosity) | 55.0 | ml/g | 55.0 | ml/g | ISO 1628 |
| Viscosity Number | 55.0 | cm³/g | 55.0 | cm³/g | ISO 307 |

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| Mechanical | Typical Value (English) | | Typical Value (SI) | | Test Method |
|---|---|---|---|---|---|
| Tensile Modulus | 1.60E+6 | psi | 11000 | MPa | ISO 527-1 |
| Tensile Stress (Break) | 23200 | psi | 160 | MPa | ISO 527-2/5 |
| Tensile Strain (Break) | 2.5 | % | 2.5 | % | ISO 527-2/5 |
| Tensile Creep Modulus | | | | | ISO 899-1 |
| 1 hr | 1.57E+6 | psi | 10800 | MPa | |
| 1000 hr | 1.28E+6 | psi | 8800 | MPa | |
| Flexural Modulus | 1.31E+6 | psi | 9000 | MPa | ISO 178 |
| Flexural Stress | 33400 | psi | 230 | MPa | ISO 178 |
| Compressive Stress | 33400 | psi | 230 | MPa | ISO 604 |
| Poisson's Ratio | 0.34 | | 0.34 | | |

| Impact | Typical Value (English) | | Typical Value (SI) | | Test Method |
|---|---|---|---|---|---|
| Charpy Notched Impact Strength | | | | | ISO 179/1eA |
| -40°F (-40°C) | 4.8 | ft·lb/in² | 10 | kJ/m² | |
| -22°F (-30°C) | 5.2 | ft·lb/in² | 11 | kJ/m² | |
| 73°F (23°C) | 5.2 | ft·lb/in² | 11 | kJ/m² | |
| Charpy Unnotched Impact Strength | | | | | ISO 179/1eU |
| -22°F (-30°C) | 21 | ft·lb/in² | 45 | kJ/m² | |
| 73°F (23°C) | 29 | ft·lb/in² | 60 | kJ/m² | |

| Hardness | Typical Value (English) | | Typical Value (SI) | | Test Method |
|---|---|---|---|---|---|
| Rockwell Hardness | | | | | ISO 2039-2 |
| M-Scale | 100 | | 100 | | |
| R-Scale | 120 | | 120 | | |
| Ball Indentation Hardness (H 961/30) | 32100 | psi | 221 | MPa | ISO 2039-1 |

| Thermal | Typical Value (English) | | Typical Value (SI) | | Test Method |
|---|---|---|---|---|---|
| Deflection Temperature Under Load | | | | | |
| 66 psi (0.45 MPa), Unannealed | 464 | °F | 240 | °C | ISO 75-2/B |
| 264 psi (1.8 MPa), Unannealed | 428 | °F | 220 | °C | ISO 75-2/A |
| Glass Transition Temperature [2] | 194 | °F | 90.0 | °C | ISO 11357-3 |
| Vicat Softening Temperature | 446 | °F | 230 | °C | ISO 306/B50 |
| Melting Temperature [2] | 486 | °F | 252 | °C | ISO 11357-3 |
| CLTE | | | | | ISO 11359-2 |
| Flow | 5.6E-6 | in/in/°F | 1.0E-5 | cm/cm/°C | |
| Flow : -40 to 73°F (-40 to 23°C) | 1.2E-5 | in/in/°F | 2.2E-5 | cm/cm/°C | |
| Flow : 131 to 320°F (55 to 160°C) | 2.2E-6 | in/in/°F | 4.0E-6 | cm/cm/°C | |
| Transverse | 4.5E-5 | in/in/°F | 8.1E-5 | cm/cm/°C | |
| Transverse : -40 to 73°F (-40 to 23°C) | 3.7E-5 | in/in/°F | 6.7E-5 | cm/cm/°C | |
| Transverse : 131 to 320°F (55 to 160°C) | 5.9E-5 | in/in/°F | 1.1E-4 | cm/cm/°C | |
| Thermal Conductivity [3] | 2.0 | Btu·in/hr/ft²/°F | 0.29 | W/m/K | ISO 22007-2 |
| Effective Thermal Diffusivity - Flow | 2.02E-10 | in²/s | 2.02E-10 | in²/s | ISO 22007-4 |

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| Electrical | Typical Value | (English) | Typical Value | (SI) | Test Method |
|---|---|---|---|---|---|
| Surface Resistivity | 1.0E+14 | ohms | 1.0E+14 | ohms | IEC 62631-3-2 |
| Volume Resistivity | 1.0E+13 | ohms·m | 1.0E+13 | ohms·m | IEC 62631-3-1 |
| Electric Strength | 810 | V/mil | 32 | kV/mm | IEC 60243-1 |
| Relative Permittivity | | | | | IEC 62631-2-1 |
| 100 Hz | 4.20 | | 4.20 | | |
| 1 MHz | 3.80 | | 3.80 | | |
| Dissipation Factor | | | | | IEC 62631-2-1 |
| 100 Hz | 0.013 | | 0.013 | | |
| 1 MHz | 7.0E-3 | | 7.0E-3 | | |
| Comparative Tracking Index (CTI) [4] | PLC 2 | | PLC 2 | | UL 746A |
| Comparative Tracking Index | 250 | V | 250 | V | IEC 60112 |
| **Flammability** | **Typical Value** | **(English)** | **Typical Value** | **(SI)** | **Test Method** |
| Burning Rate [5] (0.0394 in (1.00 mm)) | 1.5 | in/min | 38 | mm/min | ISO 3795 |
| Flame Rating | | | | | UL 94<br>IEC 60695-11-10, -20 |
| 0.030 in (0.75 mm) | HB | | HB | | |
| 0.06 in (1.5 mm) | HB | | HB | | |
| Oxygen Index | 20 | % | 20 | % | ISO 4589-2 |
| FMVSS Flammability | B | | B | | FMVSS 302 |
| **Fill Analysis** | **Typical Value** | **(English)** | **Typical Value** | **(SI)** | |
| Ejection Temperature | 338 | °F | 170 | °C | |
| **Additional Information** | **Typical Value** | **(English)** | **Typical Value** | **(SI)** | **Test Method** |
| Emission of Organic Compounds | 16.0 | µgC/g | 16.0 | µgC/g | VDA 277 |
| Fogging - G-value (condensate) | 0.0 | mg | 0.0 | mg | ISO 6452 |
| Odor | 3.00 | | 3.00 | | VDA 270 |

## Processing Information

| Injection | Typical Value | (English) | Typical Value | (SI) |
|---|---|---|---|---|
| Drying Temperature | 248 | °F | 120 | °C |
| Drying Time - Desiccant Dryer | 4.0 to 6.0 | hr | 4.0 to 6.0 | hr |
| Suggested Max Moisture | < 0.020 | % | < 0.020 | % |
| Processing (Melt) Temp | 536 to 572 | °F | 280 to 300 | °C |
| Melt Temperature, Optimum | 545 | °F | 285 | °C |
| Mold Temperature | 248 to 284 | °F | 120 to 140 | °C |
| Mold Temperature, Optimum | 266 | °F | 130 | °C |
| Holding Pressure | > 11600 | psi | > 80.0 | MPa |
| Back Pressure | As low as possible | | As low as possible | |
| Drying Recommended | yes | | yes | |
| Hold Pressure Time | 4.00 | s/mm | 4.00 | s/mm |
| Screw Tangential Speed | < 472 | in/min | < 12 | m/min |

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### Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 10°C/min

[3] Flow

[4] 23°C

[5] FMVSS 302