

Ryton® R-4-200NA

Polyphenylene Sulfide

Syensqo

PROSPECTOR®

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Technical Data

Product Description

Ryton® R-4-200NA and R-4-200BL 40% glass fiber reinforced polyphenylene sulfide compounds provide enhanced mechanical strength and low maintenance molding using conventional molding equipment

General

| | |
|-----------------------------|--|
| Material Status | • Commercial: Active |
| Literature ¹ | • Technical Datasheet |
| UL Yellow Card ² | • E95746-102108309 |
| Search for UL Yellow Card | • Syensqo • Ryton® |
| Availability | • Asia Pacific • Europe • Latin America • North America |
| Filler / Reinforcement | • Glass Fiber, 40% Filler by Weight |
| Features | • Good Strength |
| Uses | • Automotive Applications |
| RoHS Compliance | • RoHS Compliant |
| Appearance | • Natural Color |
| Forms | • Pellets |
| Processing Method | • Injection Molding |

| Physical | Nominal Value Unit | Test Method |
|--------------------------------|------------------------|-----------------|
| Density / Specific Gravity | 1.68 g/cm ³ | ASTM D792 |
| Molding Shrinkage ⁴ | | Internal Method |
| Flow : 3.20 mm | 0.20 % | |
| Across Flow : 3.20 mm | 0.50 % | |
| Water Absorption | | |
| 24 hr | 0.020 % | ASTM D570 |
| 24 hr, 23°C | 0.030 % | ISO 62 |
| Saturation, 23°C | 0.26 % | Internal Method |
| Equilibrium, 23°C, 50% RH | 0.25 % | Internal Method |

| Mechanical | Nominal Value Unit | Test Method |
|--------------------|--------------------|-------------|
| Tensile Modulus | 15600 MPa | ISO 527-1 |
| Tensile Stress | | |
| -- | 200 MPa | ISO 527-2 |
| -- | 193 MPa | ASTM D638 |
| -- ⁵ | 194 MPa | ISO 527-2 |
| Tensile Strain | | |
| Break | 1.7 % | ISO 527-2 |
| Break | 1.6 % | ASTM D638 |
| Break ⁵ | 1.8 % | ISO 527-2 |
| Flexural Modulus | | |
| -- | 14500 MPa | ASTM D790 |
| -- | 14000 MPa | ISO 178 |
| Flexural Stress | | |
| -- | 285 MPa | ISO 178 |
| -- | 269 MPa | ASTM D790 |



| Mechanical | Nominal Value Unit | Test Method |
|---|-----------------------|-------------|
| Compressive Strength | 275 MPa | ASTM D695 |
| Shear Strength | 96.0 MPa | ASTM D732 |
| Poisson's Ratio | 0.40 | ISO 527 |
| Impact | Nominal Value Unit | Test Method |
| Charpy Notched Impact Strength | | ISO 179 |
| -- | 8.7 kJ/m ² | |
| -- 5 | 8.8 kJ/m ² | |
| Charpy Unnotched Impact Strength | 53 kJ/m ² | ISO 179 |
| Notched Izod Impact | | |
| 3.18 mm | 91 J/m | ASTM D256 |
| -- | 9.0 kJ/m ² | ISO 180/A |
| Unnotched Izod Impact | | |
| 3.18 mm | 640 J/m | ASTM D4812 |
| -- | 40 kJ/m ² | ISO 180 |
| Hardness | Nominal Value Unit | Test Method |
| Rockwell Hardness | | ASTM D785 |
| M-Scale | 100 | |
| R-Scale | 120 | |
| Thermal | Nominal Value Unit | Test Method |
| Deflection Temperature Under Load | | ASTM D648 |
| 1.8 MPa, Unannealed | 265 °C | |
| Melting Temperature | 280 °C | ISO 11357-3 |
| CLTE | | ASTM E831 |
| Flow : -50 to 50°C | 1.5E-5 cm/cm/°C | |
| Flow : 100 to 200°C | 1.0E-5 cm/cm/°C | |
| Transverse : -50 to 50°C | 4.0E-5 cm/cm/°C | |
| Transverse : 100 to 200°C | 8.5E-5 cm/cm/°C | |
| Thermal Conductivity | 0.33 W/m/K | ASTM E1530 |
| UL Temperature Rating | 200 to 220 °C | UL 746B |
| Electrical | Nominal Value Unit | Test Method |
| Surface Resistivity | 1.0E+16 ohms | ASTM D257 |
| Volume Resistivity | 1.0E+16 ohms·cm | ASTM D257 |
| Dielectric Strength | 22 kV/mm | ASTM D149 |
| Dielectric Constant | | ASTM D150 |
| 25°C, 1 kHz | 3.90 | |
| 25°C, 1 MHz | 3.80 | |
| Dissipation Factor | | ASTM D150 |
| 25°C, 1 kHz | 2.0E-3 | |
| 25°C, 1 MHz | 2.0E-3 | |
| Arc Resistance | 125 sec | ASTM D495 |
| Comparative Tracking Index (CTI) | PLC 4 | UL 746A |
| Comparative Tracking Index | 175 V | IEC 60112 |
| Insulation Resistance ⁶ (90°C) | 1.0E+11 ohms | |



| Flammability | Nominal Value Unit | Test Method |
|-----------------------|--------------------|-------------|
| Flame Rating (1.5 mm) | V-0 | UL 94 |
| Oxygen Index | 57 % | ASTM D2863 |

Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

³ Typical properties: these are not to be construed as specifications.

⁴ Measured on 102 mm x 102 mm x 3.2 mm plaques, edge gated.

⁵ Conditioned data is meant to simulate 23°C 50% RH equilibrium values. Conditioning of specimens was achieved per ISO 1110 by exposing specimens for 11 days, 70°C and 62% RH.

⁶ 95%RH, 48 hr

