

# Ryton® R-4-242NA

## polyphenylene sulfide

Ryton® R-4-242NA 40% glass fiber reinforced polyphenylene sulfide compound complies with United States Food and Drug Administration (FDA) and European

Union (EU 10/2011 and 1183/2012) regulations for use as a component of articles intended for repeat use in contact with all types of foods.

### General

|                        |                                                                                                                                                                                          |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material Status        | • Commercial: Active                                                                                                                                                                     |
| Availability           | • Asia Pacific<br>• Europe<br>• Latin America<br>• North America                                                                                                                         |
| Filler / Reinforcement | • Glass Fiber, 40% Filler by Weight                                                                                                                                                      |
| Features               | • Food Contact Acceptable                                                                                                                                                                |
| Uses                   | • Appliance Components                                                                                                                                                                   |
| Agency Ratings         | • AAMA 303<br>• ACS Unspecified Rating<br>• DVGW W270<br>• EU 10/2011<br>• FDA Food Contact, Unspecified Rating<br>• KTW Unspecified Rating<br>• NSF STD-61<br>• WRAS Unspecified Rating |
| RoHS Compliance        | • RoHS Compliant                                                                                                                                                                         |
| Appearance             | • Natural Color                                                                                                                                                                          |
| Forms                  | • Pellets                                                                                                                                                                                |
| Processing Method      | • Injection Molding                                                                                                                                                                      |

### Physical

|                                | Typical Value | Unit | Test method |
|--------------------------------|---------------|------|-------------|
| Density / Specific Gravity     | 1.68          |      | ASTM D792   |
| Molding Shrinkage              |               |      |             |
| Flow : 3.20 mm                 | 0.20          | %    |             |
| Across Flow : 3.20 mm          | 0.50          | %    |             |
| Water Absorption (24 hr, 23°C) | 0.014         | %    | ASTM D570   |

### Mechanical

|                        | Typical Value | Unit | Test method |
|------------------------|---------------|------|-------------|
| Tensile Modulus        | 15100         | MPa  | ISO 527-2   |
| Tensile Strength       | 190           | MPa  | ISO 527-2   |
| Tensile Strain (Break) | 1.7           | %    | ISO 527-2   |
| Flexural Modulus       | 14700         | MPa  | ISO 178     |
| Flexural Stress        | 270           | MPa  | ISO 178     |
| Compressive Strength   | 270           | MPa  | ASTM D695   |
| Poisson's Ratio        | 0.39          |      | ISO 527     |

### Impact

|                       | Typical Value | Unit              | Test method |
|-----------------------|---------------|-------------------|-------------|
| Notched Izod Impact   |               |                   |             |
| 3.18 mm               | 85            | J/m               | ASTM D256   |
| --                    | 10            | kJ/m <sup>2</sup> | ISO 180/A   |
| -40°C                 | 11            | kJ/m <sup>2</sup> | ISO 180     |
| Unnotched Izod Impact |               |                   |             |
| 3.18 mm               | 640           | J/m               | ASTM D4812  |
| --                    | 36            | kJ/m <sup>2</sup> | ISO 180     |

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| Hardness          | Typical Value | Unit | Test method |
|-------------------|---------------|------|-------------|
| Rockwell Hardness |               |      | ASTM D785   |
| M-Scale           | 103           |      |             |
| R-Scale           | 123           |      |             |

| Thermal                           | Typical Value | Unit     | Test method |
|-----------------------------------|---------------|----------|-------------|
| Deflection Temperature Under Load |               |          | ASTM D648   |
| 1.8 MPa, Unannealed               | 268           | °C       |             |
| Melting Temperature               | 285           | °C       |             |
| CLTE                              |               |          | ASTM E831   |
| Flow : -50 to 50°C                | 1.4E-5        | cm/cm/°C |             |
| Flow : 50 to 100°C                | 1.4E-5        | cm/cm/°C |             |
| Flow : 125 to 200°C               | 1.1E-5        | cm/cm/°C |             |
| Transverse : -50 to 50°C          | 4.2E-5        | cm/cm/°C |             |
| Transverse : 50 to 100°C          | 5.1E-5        | cm/cm/°C |             |
| Transverse : 125 to 200°C         | 1.1E-4        | cm/cm/°C |             |
| Thermal Conductivity              | 0.31          | W/m/K    |             |

| Electrical          | Typical Value | Unit    | Test method |
|---------------------|---------------|---------|-------------|
| Surface Resistivity | 5.2E+15       | ohms    | ASTM D257   |
| Volume Resistivity  | 1.5E+16       | ohms-cm | ASTM D257   |
| Dielectric Constant |               |         | ASTM D150   |
| 25°C, 1 kHz         | 3.49          |         |             |
| 25°C, 1 MHz         | 3.49          |         |             |
| Dissipation Factor  |               |         | ASTM D150   |
| 25°C, 1 kHz         | 1.0E-3        |         |             |
| 25°C, 1 MHz         | 2.0E-3        |         |             |

| Flammability | Typical Value | Unit | Test method |
|--------------|---------------|------|-------------|
| Flame Rating | V-0           |      | UL 94       |

### Notes

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



Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

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