

PEEK-OPTIMA® Polymer Typical Material Properties

Granular Form* materials required

| Property | Method | Units | PEEK-OPTIMA Grade | |
|----------------------------------|--------------------------|-----------------------------------|-------------------|-----------|
| | | | LT1 | LT3 |
| Color | | | Natural | Natural |
| Melt Viscosity | *Capillary Rheometer | kNs/m ² | 0.44 | 0.16 |
| Density | ISO 1183 | G cm ⁻³ | 1.3 | 1.3 |
| Tensile Strength (Yield) | ISO 527 | MPa (ksi) | 100 | 108 |
| Tensile Elongation (Break) | ISO 527 | % | 40 | 25 |
| Flexural Modulus | ISO 178 | GPa | 4.1 | 4.2 |
| Flexural Strength | ISO 178 | MPa | 165 | 170 |
| Shear Strength | ASTM D732 | MPa | 90 | 88 |
| Shear Modulus | ISO 15310 | GPa | 1.15 | 1.00 |
| Compressive Strength | ISO 604 | MPa | 135 | 135 |
| Poisson's Ratio | ASTM D638 | N/A | 0.36 | 0.36 |
| Rockwell Hardness | ASTM D785 | M Scale | 99 | 99 |
| Izod Impact (Unnotched) | ISO 180 | kJm ⁻² | No break | No break |
| Izod Impact (Notched) | ISO 180 | kJm ⁻² | 7.5 | 4.5 |
| Relative Thermal Index | UL 746 B | °C (°F) | 260 (500) | 260 (500) |
| Water Absorption (24 hours) | ISO 62 | Wt. % | 0.5 | 0.5 |
| Melt Temperature | DSC | °C (°F) | 340 (644) | 340 (644) |
| Mold Shrinkage in flow direction | Mold temp. 210°C (410°F) | % | 1.2 | 1.3 |
| Coefficient of Thermal Expansion | ASTM D696 | 10 ⁻⁵ °C ⁻¹ | | |
| | | | <i>Below Tg</i> | 4.7 |
| | | | 10.8 | 10.8 |

Mechanical properties as molded

*Melt viscosity measurement carried out according to internal Invibio test method

Rod Forms

| Property | Method | Units | PEEK-OPTIMA Rod |
|----------------------------|---------|-------------------|-----------------|
| Tensile Strength (Yield) | ISO 527 | MPa (ksi) | 115 |
| Tensile Elongation (Break) | ISO 527 | % | 20 |
| Flexural Modulus | ISO 178 | GPa | 4 |
| Flexural Strength | ISO 178 | MPa | 170 |
| Izod Impact (Unnotched) | ISO 180 | kJm ⁻² | Does not break |
| Izod Impact (Notched) | ISO 180 | kJm ⁻² | 4.7 |

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