

# PEEK iPEEK® i551LG

Product Decrition: PEEK Granules, Color Natural

Application Areas: Wires&Cables

| Test Items             | Test Methods | Conditions   | Units              | Typical Values |
|------------------------|--------------|--------------|--------------------|----------------|
| <b>Mechanical Data</b> |              |              |                    |                |
| Tensile Strength       | ISO 527      | Yield, 23 °C | MPa                | 100            |
| Tensile Elongation     | ISO 527      | Break, 23 °C | %                  | 40             |
| Flexural Strength      | ISO 178      | Yield, 23 °C | MPa                | 170            |
| Flexural Modulus       | ISO 178      | 23 °C        | GPa                | 4.2            |
| Compressive Strength   | ISO 604      | 23 °C        | MPa                | 125            |
| Charpy Impact Strength | ISO 179/1eA  | Notched      | $\text{kJ m}^{-2}$ | 6              |
|                        | ISO 179/1U   | Unnotched    | $\text{kJ m}^{-2}$ | -              |
| Izod Impact Strength   | ISO 180/A    | Notched      | $\text{kJ m}^{-2}$ | 6.5            |
|                        | ISO 180/U    | Unnotched    | $\text{kJ m}^{-2}$ | -              |
| Mould Shrinkage        | ISO 294-4    | Along Flow   | %                  | 1              |
|                        |              | Across Flow  | %                  | 1.3            |

## Thermal Data

|                                    |             |                                 |  |      |
|------------------------------------|-------------|---------------------------------|--|------|
| Melting Point                      | ISO 11357   | -                               | °C   | 343  |
| Glass Transition (T <sub>g</sub> ) | ISO 11357   | Onset                           | °C   | 143  |
| Special Heat Capacity              | DSC         | 23 °C                           | $\text{kJ kg}^{-1} \text{ } ^\circ\text{C}^{-1}$ | 2.2  |
| Coefficient of Thermal Expansion   | ISO 11359   | Along flow below T <sub>g</sub> | $\text{ppm K}^{-1}$                              | 45   |
|                                    |             | Along flow above T <sub>g</sub> | $\text{ppm K}^{-1}$                              | 120  |
| Heat Deflection Temperature        | ISO 75      | 1.8 Mpa                         | °C   | 152  |
| Thermal Conductivity               | ISO 22007-4 | 23 °C                           | $\text{W m}^{-1} \text{ K}^{-1}$                 | 0.29 |

## Flow

|               |           |        |      |     |
|---------------|-----------|--------|------|-----|
| Melting Point | ISO 11443 | 400 °C | Pa.s | 330 |
|---------------|-----------|--------|------|-----|

## Miscellaneous

|  |          |                    |                    |      |
|--|----------|--------------------|--------------------|------|
| Density                                    | ISO 1183 | Crystalline        | $\text{g cm}^{-3}$ | 1.3  |
|  |          | Amorphous          | $\text{g cm}^{-3}$ | 1.26 |
| Shore D Hardness                           | ISO 868  | 23 °C              |                    | 85   |
| Water Absorption (3.2mm thick Tensile Bar) | ISO 62   | 24h, 23 °C         | %                  | 0.07 |
|  |          | Equilibrium, 23 °C | %                  | 0.4  |

## Electrical Data

|                            |             |            |                     |                    |
|----------------------------|-------------|------------|---------------------|--------------------|
| Dielectric Strength        | IEC 60243-1 | 2mm        | kV mm <sup>-1</sup> | 23                 |
| Comparative Tracking Index | IEC 60112   | -          | V                   | 150                |
| Dielectric Constant        | IEC 60250   | 23°C, 1kHz | -                   | 3.2                |
|                            |             | 23°C, 50Hz | -                   | 4.5                |
| Loss Tangent               | IEC 60250   | 23°C, 1MHz | -                   | 0.003              |
| Volume Resistivity         | IEC 60093   | 23°C, 1V   | Ω cm                | 10 <sup>16</sup> * |
|                            |             | 275°C      | Ω cm                | 10 <sup>9</sup> *  |

\* Results Based on Products of the Same Grade