

# BADATECH HT® | PEEK 3111 GF30

HIGH PERFORMANCE POLYMER

30% glass fibre filled Polyetheretherketon (PEEK), high viscosity, for thermally and chemically stressed parts

| Properties                                                     | Test conditions              | Test method                                                          | Unit                                                                       | dry as molded              |
|----------------------------------------------------------------|------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------|
| <b>Mechanical Properties</b>                                   |                              |                                                                      |                                                                            |                            |
| Tensile Modulus                                                | 23°C, 1 mm/Min               | ISO 527-1/2                                                          | MPa                                                                        | 11500                      |
| Tensile Strength at yield                                      | 23°C, 50 mm/Min              | ISO 527-1/2                                                          | MPa                                                                        | -                          |
| Tensile strain at yield                                        | 23°C, 50 mm/Min              | ISO 527-1/2                                                          | %                                                                          | -                          |
| Nominal strain at break                                        | 23°C, 50 mm/Min              | ISO 527-1/2                                                          | %                                                                          | -                          |
| Tensile stress at break                                        | 23°C, 5 mm/Min               | ISO 527-1/2                                                          | MPa                                                                        | 170                        |
| Tensile strain at break                                        | 23°C, 5 mm/Min               | ISO 527-1/2                                                          | %                                                                          | 2.5                        |
| Flexural Modulus                                               | 23°C                         | ISO 178                                                              | MPa                                                                        | -                          |
| Flexural Strength                                              | 23°C                         | ISO 178                                                              | MPa                                                                        | -                          |
| Charpy Impact Strength                                         | 23°C<br>-30°C                | ISO 179/1eU<br>ISO 179/1eU                                           | kJ/m <sup>2</sup><br>kJ/m <sup>2</sup>                                     | 60<br>-                    |
| Charpy Notched Impact Strength                                 | 23°C<br>-30°C                | ISO 179/1eA<br>ISO 179/1eA                                           | kJ/m <sup>2</sup><br>kJ/m <sup>2</sup>                                     | 10<br>-                    |
| Izod Notched Impact Strength                                   | 23°C<br>-30°C                | ISO 180/1A<br>ISO 180/1A                                             | kJ/m <sup>2</sup><br>kJ/m <sup>2</sup>                                     | -<br>-                     |
| Ball indentation hardness                                      | 358 N                        | ISO 2039-1                                                           | MPa                                                                        | -                          |
| <b>Thermal Properties</b>                                      |                              |                                                                      |                                                                            |                            |
| Melting temperature                                            | 10 K/min                     | ISO 3146                                                             | °C                                                                         | -                          |
| Temperature of deflection under load                           | 0,45 MPa<br>1,8 MPa<br>8 MPa | ISO 75-1/2<br>ISO 75-1/2<br>ISO 75-1/2                               | °C<br>°C<br>°C                                                             | -<br>330<br>-              |
| Coefficient of linear thermal expansion                        | parallel<br>across           | ISO 11359-2<br>ISO 11359-2                                           | E-4/K<br>E-4/K                                                             | -<br>-                     |
| Thermal conductivity                                           | Test plate 2 mm              | DIN 52612-1                                                          | W/(m*K)                                                                    | -                          |
| Maximum service temperature (50% decrease in tensile strength) | some hours<br>20.000 h       | IEC-60216<br>IEC-60216                                               | °C<br>°C                                                                   | -<br>-                     |
| Flammability                                                   |                              | UL94<br>UL94<br>UL94<br>UL94                                         | Wall thickness mm<br>Rating<br>Wall thickness mm<br>Rating                 | -<br><br>15 MM<br>V-0      |
| Glow wire test GWIT                                            |                              | IEC-60695-2-13<br>IEC-60695-2-13<br>IEC-60695-2-13<br>IEC-60695-2-13 | Wall thickness mm<br>Temperature °C<br>Wall thickness mm<br>Temperature °C | -<br>-<br>-<br>-           |
| Glow wire test GWFI                                            |                              | IEC-60695-2-12<br>IEC-60695-2-12<br>IEC-60695-2-12<br>IEC-60695-2-12 | Wall thickness mm<br>Temperature °C<br>Wall thickness mm<br>Temperature °C | -<br>-<br>2.0 MM<br>960 °C |
| <b>Electrical Properties</b>                                   |                              |                                                                      |                                                                            |                            |
| Relative Permittivity                                          | 1 MHz                        | IEC-62631-2-1                                                        | -                                                                          | -                          |
| Dissipation Factor                                             | 1 MHz                        | IEC-62631-2-1                                                        | E-4                                                                        | -                          |
| Spec. Volume Resistivity                                       | -                            | IEC-62631-3-1                                                        | Ohm*cm                                                                     | -                          |



*get the difference*

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|----------------------------------|------------------|---------------|-----------|---------------|
| Spec. Surface Resistivity        | -                | IEC-62631-3-2 | Ohm       | -             |
| Dielectric Strength              | -                | IEC-60243-1   | kV/mm     | -             |
| Comparative Tracking Index (CTI) | -                | IEC-60112     | V         | -             |
| Other Data                       |                  |               |           |               |
| Water absorption                 | 23°C, Saturation | ISO 62        | %         | -             |
| Moisture absorption              | 23°C, 50% r.h.   | ISO 62        | %         | -             |
| Density                          | 23°C             | ISO 1183      | g/cm³     | 1.52          |
| Melt Volume Rate (MVR)           | Value            | ISO 1133      | cm³/10min | -             |
|                                  | Temperature      | ISO 1133      | °C        | -             |
|                                  | Test Load        | ISO 1133      | kg        | -             |
| Processing injection molding     |                  |               |           |               |
| Melt temperature                 |                  |               | °C        | 370 - 390     |
| Mold temperature                 |                  |               | °C        | 180 - 210     |
| Guide Value Moisture             |                  |               | %         | < 0.02        |
| Drying temperature               |                  |               | °C        | 150           |
| Guide Value Drying time          |                  |               | h         | 3             |