

## TECAPEI™ GF30 Nat (Sabic Ultem®2300 Series) - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PEI (Polyetherimide)

### Colour

brown-beige

### Density

1.51 g/cm<sup>3</sup>

### Fillers

30% glass fibres

### Main features

- high thermal and mechanical capacity
- high dielectric strength
- excellent strength and stiffness
- excellent tensile strength
- easy to machine
- inherent flame resistance

### Target Industries

- aircraft and aerospace technology
- electrical engineering
- automotive industry
- mechanical engineering

| Mechanical properties                 | condition            | value                | unit                          | test method | comment                                    |
|---------------------------------------|----------------------|----------------------|-------------------------------|-------------|--------------------------------------------|
| Modulus of elasticity (tensile test)  | @ 73 °F              | 800,000              | psi                           | ASTM D 638  |                                            |
| Tensile strength at break             | @ 73 °F              | 18,000               | psi                           | ASTM D 638  |                                            |
| Elongation at break (tensile test)    | @ 73 °F              | 3                    | %                             | ASTM D 638  |                                            |
| Flexural strength                     | @ 73 °F              | 28,000               | psi                           | ASTM D 638  |                                            |
| Modulus of elasticity (flexural test) | @ 73 °F              | 800,000              | psi                           | ASTM D 790  |                                            |
| Compression strength                  | 10% strain           | 26,000               | psi                           | ASTM D 695  |                                            |
| Compression strength                  | 1% strain            | 3,700                | psi                           | ASTM D 695  |                                            |
| Compression strength                  | 5% strain            | 18,000               | psi                           | ASTM D 695  |                                            |
| Compression modulus                   | @ 73 °F              | 390,000              | psi                           | ASTM D 695  |                                            |
| Impact strength (Izod)                | @ 73 °F              | 1.1                  | ft-lbs/in                     | ASTM D 256  |                                            |
| Rockwell hardness                     | M Scale              | 110                  |                               | ASTM D 785  |                                            |
| Shear strength                        | @ 73 °F, ASTM D732   | 14,500               | psi                           | -           |                                            |
| Thermal properties                    | condition            | value                | unit                          | test method | comment                                    |
| Deflection temperature                | @ 66 psi, 1/4"       | 414                  | °F                            | ASTM D 648  | 1) (1) injection molded data               |
| Deflection temperature                | @264 psi, 1/4        | 409                  | °F                            | ASTM D 648  | 2) (2) injection molded data               |
| Service temperature                   | short term           | 392                  | °F                            | -           | 3) (3) Data obtained from public source    |
| Service temperature                   | Long Term            | 356                  | °F                            | -           | 4) (4) Data obtained from public source    |
| Thermal expansion (CLTE)              |                      | 1.1*10 <sup>-5</sup> | in/in/°F                      | ASTM D 696  | 5) (5) Injection molded data               |
| Thermal conductivity                  |                      | 1.56                 | BTU-in/hr-ft <sup>2</sup> -°F | ASTM D 2214 | 6) (6) injection molded data               |
| Electrical properties                 | condition            | value                | unit                          | test method | comment                                    |
| volume resistance                     | 1/16                 | 3.0*10 <sup>16</sup> | Ω*cm                          | ASTM D 257  | 1) (1) injection molded data               |
| Dielectric strength                   | In Oil               | 630                  | V/mil                         | ASTM D 149  | 2) (2) injection molded data               |
| Dielectric strength                   | In Air               | 770                  | V/mil                         | ASTM D 149  | 3) (3) injection molded data               |
| Dissipation factor                    | @ 1kHz, 50% RH, 73°F | 0.0015               | %                             | ASTM D 150  | 4) (4) injection molded data               |
| Dielectric constant                   | @ 1kHz, 50% RH       | 3.7                  |                               | ASTM D 150  | 5) (5) injection molded data               |
| Other properties                      | condition            | value                | unit                          | test method | comment                                    |
| Moisture absorption                   | @ 24 hrs, 73 °F      | 0.16                 | %                             | ASTM D 570  | 1) (1) injection molded data               |
| Moisture absorption                   | @ saturation, 73 °F  | 0.90                 | %                             | ASTM D 570  | 2) (2) injection molded data               |
| Flammability (UL94)                   |                      | V0                   |                               | -           | 3) (3) Injection molded data(0.25mm thick) |
| Flammability                          | 6 mm                 | pass                 |                               | FAR 25.853  | 4) (4) 6 mm test specimen                  |

→ Resin specification:  
ASTM D5205-10 PEI0110G30A96299, 159 Mpa, 224 Mpa, 2080C  
Shapes specification:  
ASTM D7293-06 S-PEI0213

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