# KT 820 CF30

## *Carbon Fiber Reinforced PEEK*

## DESCRIPTION

**KT 820 CF30** is a 30% carbon fiber reinforced PEEK polymer offering high strength for applications demanding strength, wear, and abrasion resistance and broad based chemical resistance KT820 CF30's high molecular weight allows Drake to offer shapes up to 6" diameter with low residual stress and optimal machinability. Its low CLTE in the primary fiber direction means parts dimensions remain stable with temperature change. Additionally, it also has high temperature reliability, along with 2x the creep resistance and 2.5x more wear resistance than unfilled PEEK, enabling the support of high loads without permanent deformations.

## TYPICAL APPLICATIONS:

- Pump wear parts & vanes
- Seals & back-up rings
- Static dissipative components

***Material Notes:*** *KT820 CF30 is the equivalent to Victrex 450CA30 and is available up to 6" diamater rod.*

## EXTRUDED SHAPES PROPERTIES

| PHYSICAL PROPERTIES | METRIC | IMPERIAL | METHODS |
|---|---|---|---|
| Specific Gravity | 1.41 g/cc | 0.0515 lb/in$^3$ | ASTM D792 |
| Water Absorption | 0.06% | 0.06% | Immersion, 24hr; ASTM D570(2) |
| Water Absorption at Saturation | 0.3% | 0.3% | Immersion; ASTM D570(2) |
| **MECHANICAL PROPERTIES*** | | | |
| Hardness, Rockwell M | 100 | 100 | ASTM D785 |
| Hardness, Rockwell | 125 | 125 | ASTM D785 |
| Hardness, Shore D | 92 | 92 | ASTM D2240 |
| Tensile Strength, Ultimate | 131 MPa | 19,000 PSI | ASTM D638 |
| Elongation at Break | 4% | 4% | ASTM D638 |
| Tensile Modulus | 7586 MPa | 1,100,000 PSI | ASTM D638 |
| Flexural Modulus | 7586 MPa | 1,100,000 PSI | ASTM D790 |
| Flexural Yield Strength | 207 MPa | 30,000 PSI | ASTM D790 |
| Compressive Strength | 180 MPa | 26,000 PSI | 10% Def.; ASTM D695 |
| Compressive Modulus | 6900 MPa | 1,000,000 PSI | ASTM D695 |
| Izod Impact (notched) | 78.8 J/m | 1.5 ft-lbs/in | ASTM D256 Type A |
| **THERMAL PROPERTIES** | | | |
| Glass Transition Temp./$T_g$ | 340° C | 644° F | ASTM D3418 |
| Heat Deflection Temperature (264 PSI) | 271° C | 520° F | ASTM D638 |
| Coefficient of Linear Thermal Expansion | 1.8 x $10^{-5}$ $C^{-1}$ | 1.0 x $10^{-5}$ $F^{-1}$ | ASTM E831 |

*The mechanical properties of extruded shapes may differ from the values published by resin producers. Published resin data is always generated from test specimens injection molded under optimum conditions. Drake's extruded shape values are generated using specimens machined from actual shapes and may reflect surface imperfections from machining, enhanced crystallinity as a result of processing, and fiber alignment inherent in all reinforced plastic shapes, regardless of process. For additional information on the effects of fiber alignment, see Drake Fiber Orientation Diagram, available on the Resource page of our website.