

## KT-820 CF30

KetaSpire KT-820 CF30 is the low-flow, 30% carbon-fiber reinforced grade of polyetheretherketone (PEEK). Carbon-fiber reinforcement of KetaSpire PEEK provides the maximum levels of mechanical properties at temperatures approaching 300°C, and the lowest coefficient of linear thermal expansion within the KetaSpire product family.

KetaSpire PEEK is produced to the highest industry standards and is characterized by a distinct combination of properties, which include excellent wear resistance,

best-in-class fatigue resistance, ease of melt processing, high purity, and excellent chemical resistance to organics, acids, and bases.

These properties make it well-suited for applications in healthcare, transportation, electronics, chemical processing, and other industrial uses. KetaSpire KT-820 CF30 can be easily processed using typical injection molding and extrusion processes.

### Typical Properties of KetaSpire KT-820 CF30 Resin

| Property  | ASTM<br>Test<br>Method | Typical Values <sup>(1)</sup> |          |          |          |
|---|------------------------|-------------------------------|----------|----------|----------|
|   |                        | U.S. Customary Units          |          | SI Units |          |
|   |                        | Value                         | Units    | Value    | Units    |
| <b>Mechanical</b>                                   |                        |                               |          |          |          |
| Tensile Strength                                    | D 638                  | 29.1                          | kpsi     | 201      | MPa      |
| Tensile Modulus                                     | D 638                  | 2,860                         | kpsi     | 19.7     | GPa      |
| Tensile Elongation at Break                         | D 638                  | 2.0                           | %        | 2.0      | %        |
| Flexural Strength                                   | D 790                  | 46.0                          | kpsi     | 317      | MPa      |
| Flexural Modulus                                    | D 790                  | 2,540                         | kpsi     | 17.5     | GPa      |
| Izod Impact, Notched                                | D 256                  | 1.3                           | ft-lb/in | 69       | J/m      |
| Izod Impact, Unnotched                              | D 4812                 | 14                            | ft-lb/in | 750      | J/m      |
| <b>Thermal</b>                                      |                        |                               |          |          |          |
| Deflection Temperature at 264 psi (1.82 MPa)        | D 648                  | 599                           | °F       | 315      | °C       |
| Glass Transition Temperature                        | D 3418                 | 302                           | °F       | 150      | °C       |
| Melting Point                                       | D 3418                 | 644                           | °F       | 340      | °C       |
| Coefficient Linear Thermal Expansion <sup>(2)</sup> | E 831                  | 2.9                           | ppm/°F   | 5.2      | ppm/°C   |
| <b>General and Fabrication</b>                      |                        |                               |          |          |          |
| Specific Gravity                                    | D 792                  | 1.41                          |          | 1.41     |          |
| Water Absorption, 24 hours                          | D 570                  | 0.1                           | %        | 0.1      | %        |
| Melt Flow, 400°C, 2.16 kg                           | D 1238                 | 1.1                           | g/10 min | 1.1      | g/10 min |
| Mold Shrinkage, flow direction                      | D 955                  | 0.1                           | %        | 0.1      | %        |
| Mold Shrinkage, transverse direction                | D 955                  | 0.5                           | %        | 0.5      | %        |

<sup>(1)</sup> Properties shown are typical of limited production and final specification ranges may vary. Values are typical of uncolored resin, addition of colorants or other additives may alter properties.

<sup>(2)</sup> Measured in flow direction over the temperature range -50°C to 50°C

## Drying

KetaSpire resins must be dried completely prior to melt processing. Incomplete drying will result in defects in the formed part ranging from surface streaks to severe bubbling. Pellets can be dried on trays in a circulating air oven or in desiccating hopper dryer. Drying conditions recommended are 4 hours at 150°C (300°F) .

## Injection Molding

KetaSpire resins can be readily injection molded in most screw injection machines. A general purpose screw with a compression ratio in the range of 2.5 to 3.5 to 1 is recommended, as is minimum back pressure. Injection speeds should be as fast as possible, consistent with part appearance requirements. Mold temperatures in the range of 350°F to 400°F (177°C to 204°C) are suggested. Recommended starting point barrel temperature settings are shown in the following table.

| Zone heater settings |                                 |     |
|----------------------|---------------------------------|-----|
| Zone                 | Recommended Barrel Temperatures |     |
|                      | °F                              | °C  |
| Rear (Feed)          | 690                             | 365 |
| Middle               | 700                             | 371 |
| Front                | 710                             | 377 |
| Nozzle               | 720                             | 382 |

## Standard Packaging and Labeling

KetaSpire resins are packaged in polyethylene buckets or cardboard boxes depending upon the order size.

Individual packages will be plainly marked with the product number, the color, the lot number, and the net weight.

## Product Safety and Emergency Service

For product safety information or a Material Safety Data Sheet on a product of Solvay Advanced Polymers

**1 (800) 621-4557**

**1 (770) 772-8880 outside of U.S.**

For information or help in an emergency such as a spill, leak, fire or explosion, call day or night:

Emergency Health Information

**1 (800) 621-4590**

**1 (770) 772-5177 outside of U.S.**

Emergency Spill Information

**CHEMTREC 1 (800) 424-9300**

**1 (703) 527-3887 outside of U.S.**

**collect calls accepted**

## For Additional Information

Technical Service

**1 (800) 621-4557**

Customer Service

**1 (800) 848-9744**

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