



# PEEK

## Works with

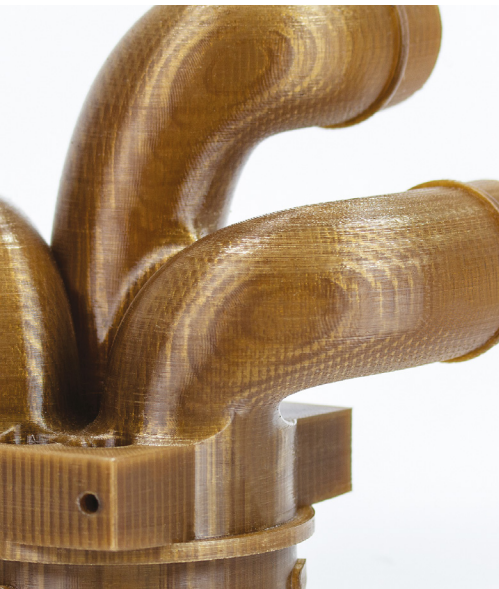
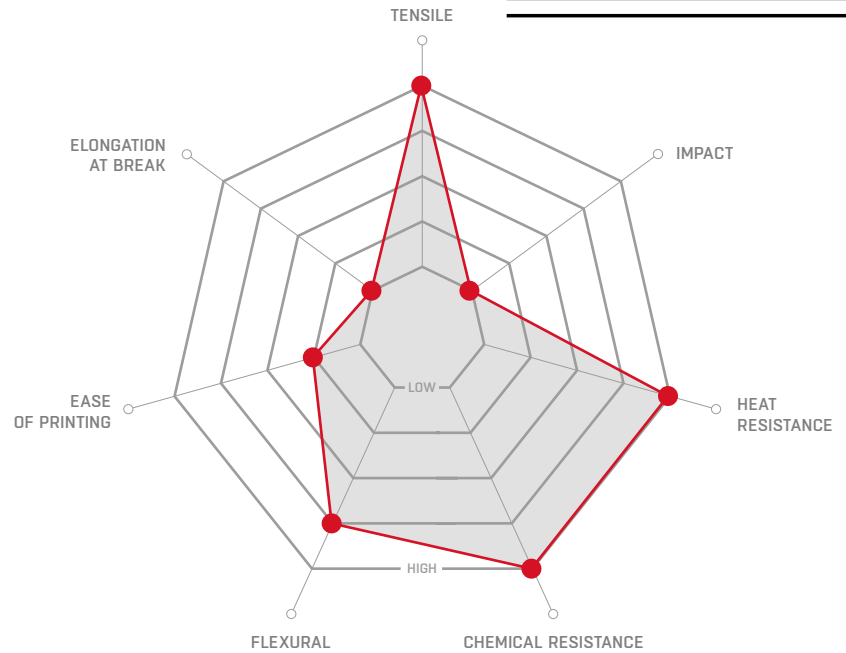
- ✓ INDUSTRY F340
- ✓ INDUSTRY F420
- ✓ INDUSTRY F350
- ✓ INDUSTRY F421

## Support materials:

soluble, breakaway

## Perfect for:

- ✓ Medical applications
- ✓ Machine and device parts
- ✓ High temperatures applications up to 230°C
- ✓ Slipping and sliding applications



| MECHANICAL             | CONDITIONS           | TEST METHOD | TYPICAL VALUE  |
|------------------------|----------------------|-------------|----------------|
| Tensile Strength       | Yield, 23 °C         | ISO 527     | 105 MPa        |
| Tensile Elongation     | Break, 23 °C         | ISO 527     | 30%            |
| Tensile Modulus        | 23 °C                | ISO 527     | 4.1 GPa        |
| Flexural Strength      | At 3,5% strain, 23 ° | ISO 178     | 130 MPa        |
| Flexural Modulus       | 23 °C                | ISO 178     | 3.9 GPa        |
| Charpy Impact Strength | Notched, 23 °C       | ISO 179/1eA | 4.2 kJ m-2     |
| Izod Impact Strength   | Notched, 23 °C       | ISO 180/A   | 5.0 kJ m-2     |
| THERMAL DATA           |                      |             | TYPICAL VALUE  |
| Melting Point          |                      | ISO 11357   | 343 °C         |
| Glass Transition       | Onset                | ISO 11357   | 143 °C         |
| Thermal Conductivity   | Along flow, 23°      | ISO 22007-4 | 0.32 W m-1 K-1 |

PEEK is a high-performance polymer of a PAEK family that offers a unique combination of properties. 3D printed PEEK models combine resistance to various chemicals, wear, and fatigue resistance, exceptionally high-temperature resistance as well as very good mechanical properties. PEEK mechanical properties are one of the highest of all known thermoplastic materials. PEKK and PEEK are extremely resistant to external conditions.

PEEK is flame resistant (Class V-0 according to UL 94) with low smoke and toxicity. It provides high resistance for a wide range of chemicals, also in increased service temperatures.

PEEK can also be used as an effective electric insulator in a wide range of frequencies with outstanding thermal and environmental resistance.

Usually, the desirable state of PEEK is the semi-crystalline, which can be achieved after the annealing process of the printed model. In order to reach high dimensional accuracy of the models and the quality of the expected prints, PEEK needs high extrusion temperature, heated bed, and the actively heated print chamber.

3DGence is the first company to implement the ESM-10, soluble support material to be printed with PEEK. Using the soluble material makes the postprocessing very easy and makes the PEEK printing process highly cost-effective. The printing profile is available in 3DGence SLICER 4.0.

