MADE IN AUSTRIA

PEEK

High Performance Filament

255°C

87 N/mm²
355 kg

53kJ/m²
21 cm

Polyetheretherketone (PEEK) is a high-temperature-resistant thermoplastic and belongs to the group of polyaryletherketones. In addition to its high temperature resistance, it is characterized by good mechanical properties, high chemical resistance, and low wear during friction. PEEK is a flame-retardant polymer.

MATERIAL DATA		PRINTED
Resistance temperature		**255°C**
Tensile strength	ISO 527	**87 N/mm²**
Elongation at break	ISO 527	**8,3 %**
Impact strength	ISO 179/1eU	**53 kJ/m²**

MATERIAL DATA		INJECTION MOLDING
Resistance temperature		**255°C**
Tensile strength	ISO 527	**100 N/mm²**
Elongation at break	ISO 527	**40 %**
Impact strength	ISO 179/1eA	**ohne Bruch**
Flexural Modulus	ISO 178	**4200 MPa**
Melting point	ISO 11357	**343°C**
Glass Transition	ISO 11357	**143°C**
HDT	ISO 75-f 1,8MPa	**152°C**
MFI	ISO1133 380°C 5kg	**20 g 10min^{-1}**
Density	ISO1183	**1,26 - 1,30 g/cm³**
Shore D Hardness	ISO 868 23°C	**85**
Electrical Data		**on request**

Processing note: Because of the high melting point, PEEK can be processed in dedicated printers only. There are nozzle temperatures > 390° C, a closed pressure chamber (optimally heated) and a heated printing plate > 130° C necessary. The typical printing speeds is between 5 mm/s and 10 mm/s.

Disclaimer: The information provided in this document has been prepared to the best of our knowledge and belief, but conduces only as non-binding reference. Check if the selected material can be used for your application. For processing and 3D printing, pay attention to our safety data sheets. W2 Polymer GmbH is not liable for damages, injuries or losses caused by the use of our materials in your application.
Test values (printed): The stated values are guideline values, no binding minimum values. Please note that the 3D printing process can significantly influence the properties. Furthermore, geometry and environmental influences have a major impact on end use performance. Printed on a Creatbot F160 with Simplify3D in the xy plane. If you need more information, help or support, please contact us at: support@w2polymer.com

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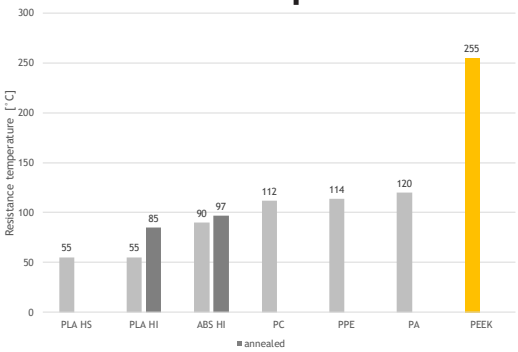
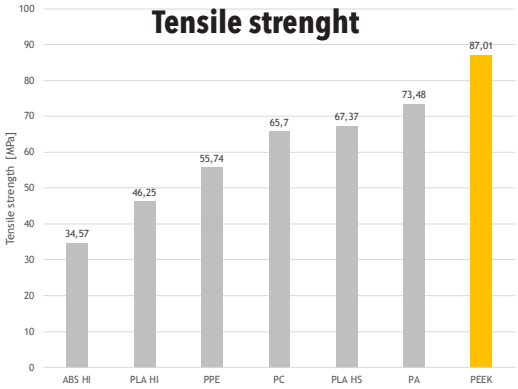
Material comparison

Resistance temperature



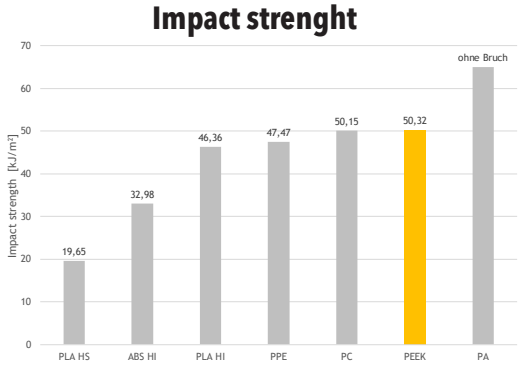
The resistance temperature is a value for the maximum operating temperature. Note, the closer you get to this value, the more the material properties change. When working at the limit we recommend checking exactly, if the material is suitable for the use case.

Tensile strenght



The tensile strength is a value how much I can pull on the material. 1 MPa corresponds to 1 N/mm² (Force per surface). 1 kg corresponds to 9,81N. The tensile strength specimen has an cross sectional area of 40mm². In other words, a tensile strength of 87.01 MPa means, that a tensile specimen with a cross-section of 40mm² will break at a tensile load of 355kg.

Impact strenght



The impact resistance is a measure of how well the material can absorb shock and impact energy. kJ / m² (energy per cross-sectional area). An impact strength of 50.32 kJ / m² corresponds to the energy of a 1 kg heavy weight from a fall height of 21 cm, which is necessary to break a beat sample printed in PEEK with a cross section of 40mm².

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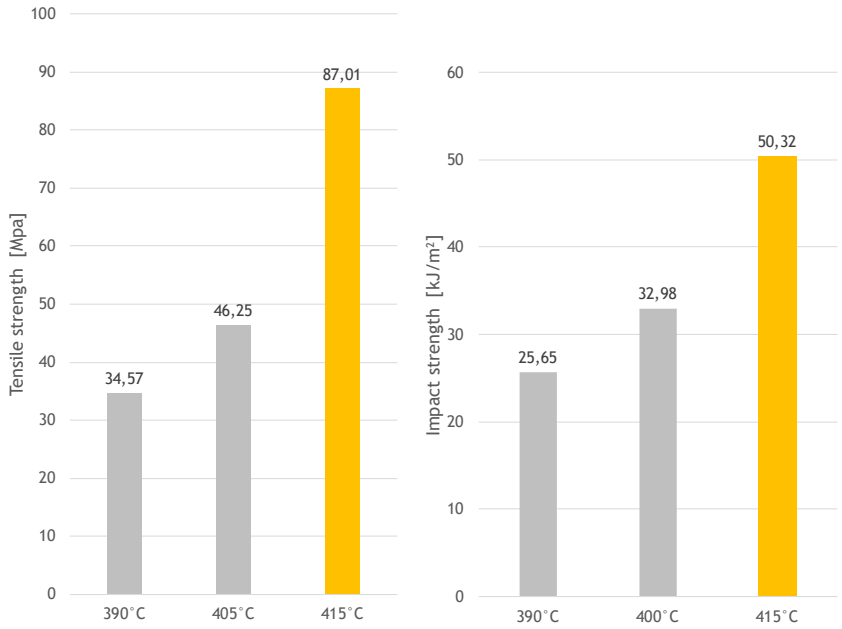
Printing temperature analysis



The printing temperatures have a major influence on the material characteristics. For high tensile strength and high impact strength, nozzle temperatures of about 415° C are required. The specimens were printed with simplify3D on a Creatbot F160 printer with 130° C heating bed and a closed printing chamber at the xy plane.

Food Contact:

FDA 21 CFR 177.2415

EU 10/2011

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