IEMAI®

3D printing solutions for high performance materials

PEEK Technical Data Sheet(TDS)

PEEK is considered as one of the world's highest performing functional materials. It has excellent biocompatibility, chemical resistance, mechanical properties, and thermal properties. PEEK is a semicrystalline thermoplastic with excellent

mechanical and chemical resistance properties that are retained to high temperatures. PEEK has an excellent biocompatibility and close to bone modulus, which allow it to become a favorable material for implantation.

It is often used in demanding applications such as aerospace, automotive, chemical, and medical industries.

IEMAI 3D high performance PEEK filament is based on FFF/FDM technology, with a diameter of 1.75 mm, having excellent layer adhesion, and able to improve the strength and shock resistance of the prototype.

Mechanical Properties	Conditions	Methods	Value
Tensile Strength	Yield,23°C	ISO 527	100 MPa
Tensile Elongation	Break,23°C	ISO 527	40%
Flexural Strength	Yield,23°C	ISO 178	170 MPa
Flexural Modulus	23°C	ISO 178	4.2 GPa
Compressive Strength	23°C	ISO 604	125MPa
Charpy Impact Strength	Notched,23°C	ISO 179/1eA	$6kJm^{-2}$
Izod Impact Strength	Notched,23°C	ISO 180/A	$6kJm^{-2}$

Thermal Data			
Melting Point		ISO 11357	343°C
Glass Transition	Onset	ISO 11357	143°C
Coefficient of Thermal Expansion	Along flow below	ISO 11359	$45ppmK^{-1}$
Heat Deflection Temperature	1.8Mpa	ISO 75-f	152°C
Thermal Conductivity	Along flow, 23°C	ISO22007-4	$0.29Wm^{-1}\,K^{-1}$

Other			
Density	Crystalline	ISO 1183	$1.30Gcm^{-3}$

Shore D Hardness	Saturation, 23°C	ISO 868	85
Water Absorption by Immersion	23°C	ISO 62-1	0.40%

Print Recommendation	
Nozzle Temperature	390 -430 ºC
Bed Temperature	110 -150 ºC
Print Speed	30-50 mm/s
Chamber Temperature	90-150 °C
Cooling Fan	0-50%