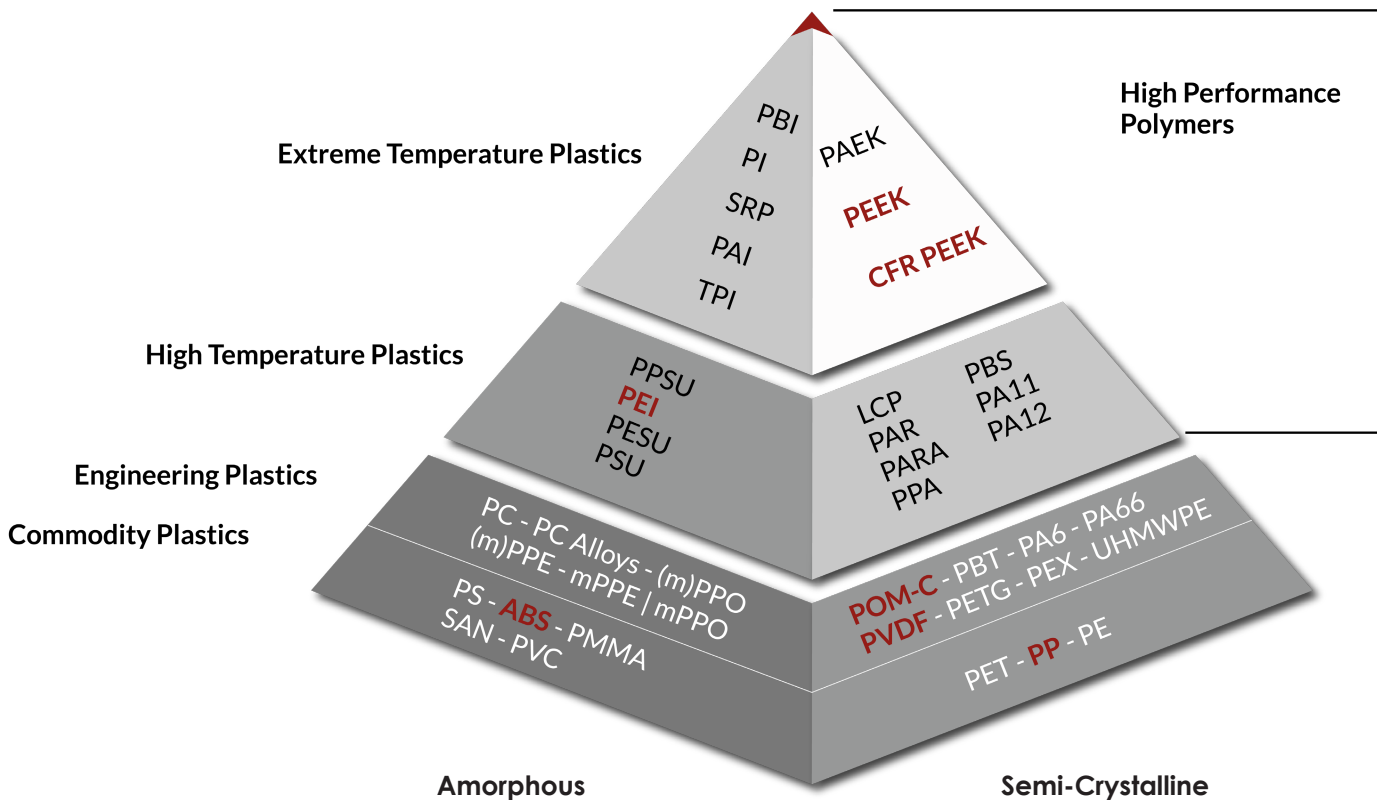


TECHNICAL GRADE MATERIALS

Apium Specialty Filaments - PEI ULTEM™



High Performance Solutions

PEI ULTEM™ - Material Properties

Flame Retardant High Performance

PEI ULTEM™ is an amorphous flame retardant high performance thermoplastic. Its high strength-to-weight ratio and FST (flame, smoke and toxicity) rating make it ideal especially for the transportation industry.

Apium's professional 3D printers are capable of printing amorphous PEI ULTEM™ to the highest quality due to the advanced material profiles (a set of pre-defined parameters for printing process) while overcoming the common challenges with oozing, stringing and warping.

Characteristics of 3D Printed Amorphous PEI ULTEM™

Apium advanced temperature management system in combination with Apium's material profiles eliminates commonly occurring printing failures and ensures the highest print quality.

Characteristics of 3D printed PEI ULTEM™ with Apium:

- High Mechanical Strength
- Inherent Flame Resistance
- High Dielectric Strength
- Heat Resistance
- Lightweight
- Low Smoke Output



PEI ULTEM™ Filament - High Performance Amorphous Material



High Performance Solutions

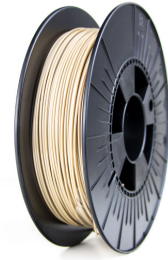
PEI ULTEM™ - Mechanical Tests



MECHANICAL PROPERTIES	CONDITIONS	TEST METHOD	VALUE
Tensile Strength XY	23 °C, 48% Humidity	DIN EN ISO 527	65,6 MPa
Tensile Strength YZ	23 °C, 48% Humidity	DIN EN ISO 527	64,7 MPa
Tensile Strength Z	23 °C, 48% Humidity	DIN EN ISO 527	42,9 MPa
Tensile Elongation XY	23 °C, 48% Humidity	DIN EN ISO 527	2,2 %
Tensile Elongation YZ	23 °C, 48% Humidity	DIN EN ISO 527	2 %
Tensile Elongation Z	23 °C, 48% Humidity	DIN EN ISO 527	1,3 %
Tensile Modulus XY	23 °C, 48% Humidity	DIN EN ISO 527	2,7 GPa
Tensile Modulus YZ	23 °C, 48% Humidity	DIN EN ISO 527	2,5 GPa
Tensile Modulus Z	23 °C, 48% Humidity	DIN EN ISO 527	2,8 GPa
Flexural Strength XY	23 °C, 48% Humidity	DIN EN ISO 527	56 MPa
Flexural Strength YZ	23 °C, 48% Humidity	DIN EN ISO 527	46 MPa
Flexural Strength Z	23 °C, 48% Humidity	DIN EN ISO 527	27 MPa
Flexural Modulus XY	23 °C, 48% Humidity	DIN EN ISO 527	8,81 GPa
Flexural Modulus YZ	23 °C, 48% Humidity	DIN EN ISO 527	8,25 GPa
Flexural Modulus Z	23 °C, 48% Humidity	DIN EN ISO 527	7,32 GPa
Charpy Impact Strength XY	23 °C, 48% Humidity	DIN EN ISO 179	3,65 kJ/m ²
Charpy Impact Strength YZ	23 °C, 48% Humidity	DIN EN ISO 179	2,64 kJ/m ²
Charpy Impact Strength Z	23 °C, 48% Humidity	DIN EN ISO 179	1,68 kJ/m ²

High Performance Solutions

PEI ULTEM™ - Applications



Aerospace

PEI ULTEM™ is the solution for aircraft components such as electronics mounting brackets with high creep resistance over a wide range of temperatures and flame resistance. It offers you significant advantages with its excellent characteristics.



Automotive

PEI ULTEM™ is your material solution for automotive applications which require consistent dielectric properties, high strength and the ability to withstand high temperatures, such as ignition components and thermostat housings.



Semiconductors and Electronics

With its excellent material properties, PEI ULTEM™ is your material solution for challenging applications such as connectors and insulators.



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